GREECE · PARMA · HILTON
HOJACK TRAIL FEASIBILITY STUDY







OCTOBER 2016

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HOJACK TRAIL
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3. EXECUTIVE SUMMARY


Existing Conditions, Hojack Corridor

INTRODUCTION

The purpose of the Hojack Trail Feasibility Study is to assess the feasibility of developing a 6.3 +/- mile multi-use trail with associated trail amenities along the former Hojack Rail Line from the NYS Route 390 Bike Path in the Town of Greece west to the Village of Hilton.

The study area is primarily comprised of an inactive railroad corridor, electric transmission lines, and subsurface utilities. The corridor is owned by Rochester Gas and Electric (RG&E), which uses the trail primarily to access utilities.

The planning process for this study included outreach to both the general public and to key stakeholders. Representatives from various organizations served on the steering committee and provided continuity and study oversight. The general public was invited to attend two public meetings to learn more about the trail project, and provide feedback to the committee. The Hojack Trail Feasibility Study builds on previously completed planning initiatives that have occurred in and adjacent to the study area.

BENEFITS OF ACTIVE TRANSPORTATION

The extensive benefits of active transportation were documented for this study. These benefits include decreased impact on the environment through reduced motor vehicle usage, social benefits due to increased access for people without motor vehicles, increased health benefits through physical activity, and economic benefits resulting from decreased strain on our health system.

INVENTORY AND ANALYSIS

The study included an inventory and analysis phase where the existing conditions in and around the Hojack Trail study area were assessed. Topography, soils, ecological character, habitat, drainage, wetlands, land use, destinations, adjacent property ownership, access, circulation, infrastructure and utilities were all evaluated. Other than the project area being owned by RG&E, none of these factors present a significant constraint to the development of a trail in the study area. The project addresses a number of opportunities and constraints, which include: connectivity to the larger trail system, adaptive re-use of a transportation corridor, habitat diversity, scenic views, historic resources, active transportation, and property ownership. The existing conditions within the RG&E corridor are able to accommodate the proposed multi-use trail.

ALTERNATIVES CONSIDERED

Alternatives were developed by carefully evaluating the data gathered in the inventory and analysis phase. The Hojack Trail has a clear preferred alignment, described in this section. Choices for construction materials, as well as alternatives for trailhead locations, road crossing treatments, trail surfacing and signage systems were also considered.

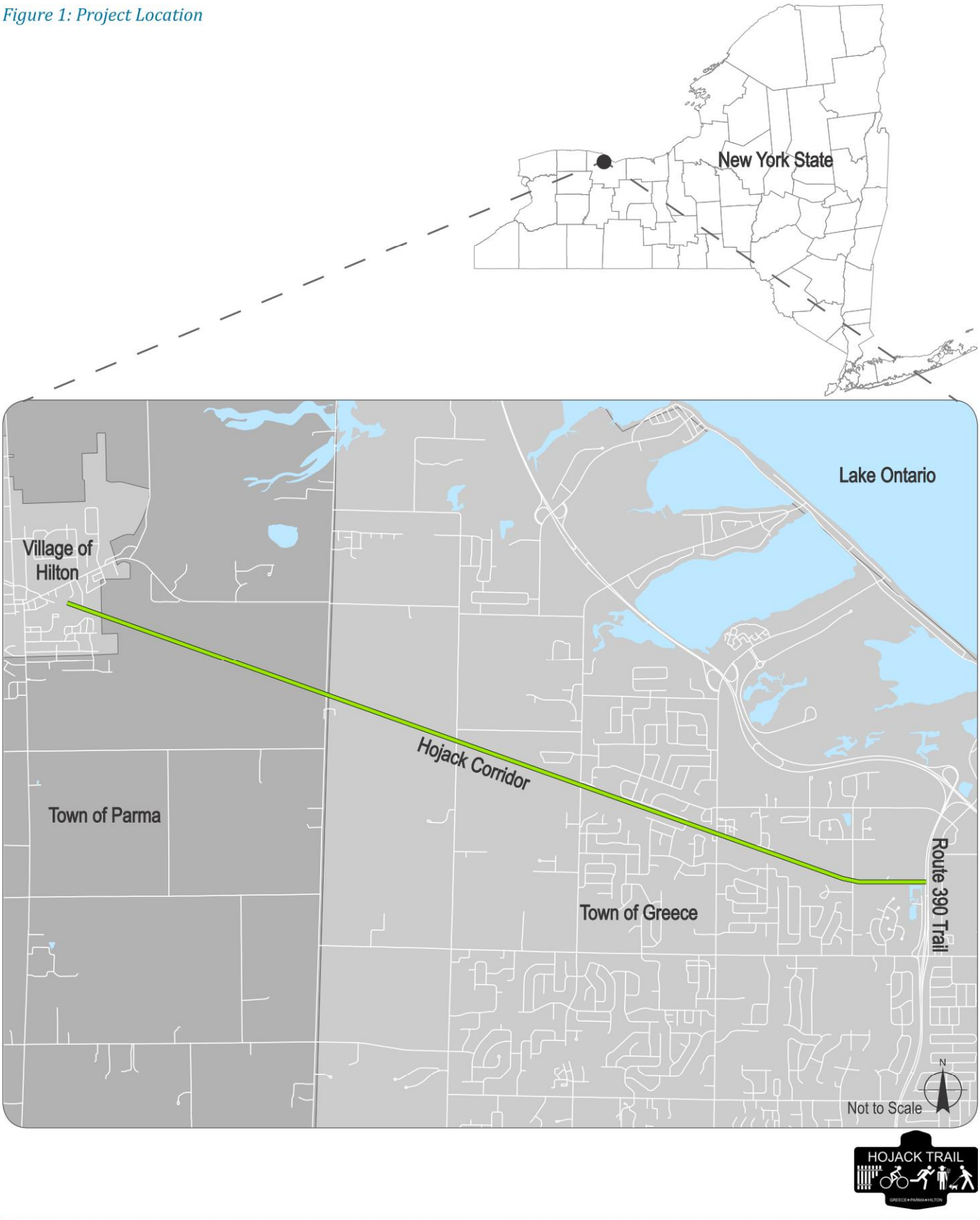
RECOMMENDATIONS

The Hojack Trail study was primarily focused on assessing the feasibility of the trail. However, preliminary design decisions were made to allow for estimating the cost of trail development. These decisions are explained, and typical construction details are provided. A project phasing plan is also included in this section.

IMPLEMENTATION

The feasibility study includes implementation information regarding SEQRA documentation, the permitting process, and funding. The study also addresses trail construction standards, user guidelines, and operations and maintenance. Appendices are included that provide a summary of public input, an overview of schematic costs, the economic impact of trails, and potential areas of conflict between trail users.

Figure 1: Project Location



4. INTRODUCTION

Existing Conditions, Hojack Corridor

4.1 BACKGROUND AND PURPOSE OF THE STUDY

The purpose of the Hojack Trail Feasibility Study is to assess the feasibility of developing a 6.3 +/- mile multi-use trail with associated trail amenities along the former Hojack Rail Line from the NYS Route 390 Bike Path in the Town of Greece west to the Village of Hilton. The Hojack corridor was originally established as a rail corridor serving communities along the Lake Ontario shoreline in this region. With the decline of rail service use, the corridor has remained an important asset in terms of providing utility service to those same communities. The location of the corridor lends itself to becoming an important link in the regional trail network. Please see **Figure 1** for an illustration of the project location.

Building on the recommendations in the Town of Greece 2001 Community Master Plan Update the Town has recently completed and adopted a town-wide Bicycle and Pedestrian Master Plan. Major goals of the town-wide study included establishing connections with neighboring communities, connecting residents to the regional trail network, and generally improving access to walking and bicycling facilities. These efforts are aimed at providing additional transportation choices for town residents, offering opportunities for physical activity and improved health, and making Greece, Hilton and Parma even better places to live. An outgrowth of these planning efforts is the renewed interest in developing the Hojack Trail to serve residents and visitors to the Village of Hilton, the Town of Parma, and the Town of Greece.

STUDY AREA

The study area begins at the current terminus of the NYS Route 390 Bike Path in the Town of Greece, just west of Rochester, NY, and south of Lake Ontario, extends 6.3+/- miles west through the Towns of Greece and Parma, ending in the Village of Hilton. The study area includes the former Hojack Rail Line described above, along with the sufficient adjacent land (approximately 1/2 to 1 miles each side of the prospective trail alignment alternative). The Hojack Rail Line corridor, within the project limits, is currently owned by Rochester Gas &Electric (RG&E) with adjoining privately owned parcels and Town of Greece land.

STUDY OBJECTIVES

The Hojack Trail Feasibility Study was guided by the following objectives

- Explore the possibility of using the transmission corridor for recreational purposes.
- Establishing active transportation connections with neighboring communities.
- Connecting residents with the regional trail network.
- Maintain user safety.
- Provide opportunities for universal access.
- Improving access to walking and bicycling facilities.
- Protect and enhance existing resources.
- Emphasize sustainability and ease of maintenance.

These efforts are aimed at improving quality of life for town residents by offering opportunities for physical activity and improved health, and making the communities of Greece, Parma, and Hilton even better places to live.

4.2 COMMUNITY INVOLVEMENT

Municipal planning of any kind cannot be done in a vacuum, and must be informed by local residents. GTC regularly identifies community participation as an objective in the Long Range Transportation Plan for the Genesee-Finger Lakes Region, which guides their planning efforts. The Plan states, "The transportation planning process should be conducted in as open and visible a manner as possible, encouraging community participation and interaction between and among citizens, professional staff, and elected officials." New York State has also identified principles to guide community planning processes, stating that planning should be continuous, comprehensive, participatory, and coordinated. Citizen participation is, not just a requirement, but a critical element of a successful plan. **Table 1** chronicles the meetings that were conducted regarding this project.

Table 1: Chronology of Community Involvement

DATE	*MEETING*	*PURPOSE*
May 13, 2015	Project Advisory Committee Meeting	Project Kick-Off
September 17, 2015	Project Advisory Committee Meeting	Review Project Progress, Preparation for First Public Meeting
September 22, 2015	Public Information Meeting at the Greece Town Hall	Open House Format: Introduce Project, Present Inventory and Analysis, Solicit Input
February 2, 2016	Project Advisory Committee Meeting	Review Project Progress, Preparation for Second Public Meeting
March 3, 2016	Public Information Meeting at the Greece Town Hall	Open House Format: Present Draft Recommendations, Solicit Input

The planning process for this study included outreach to both the general public and key stakeholders. A project advisory committee, members listed below, was comprised of representatives from the Town of Greece, the Town of Parma, the Village of Hilton, Monroe County, GTC staff, interested land owners, RG&E and affected state agencies. Committee members provided continuity and study oversight. **Appendix A** includes information related to public outreach.

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Scott Copey, Town of Greece
Mike McHenry, Village of Hilton
Pete O'Brien, Town of Greece Director of Parks and Recreation

4.3 RELATIONSHIPS TO OTHER PLANS AND STUDIES

The goal of planning is to improve the welfare of people and their communities by creating more convenient, equitable, healthful, efficient, and attractive places for present and future generations (APA, 2011). Planning enables civic leaders, businesses, and citizens to play a meaningful role in creating communities that enrich people's lives. In developing new plans, it is important to refer to plans and studies that have already been completed to evaluate how the new plan relates to existing plans.

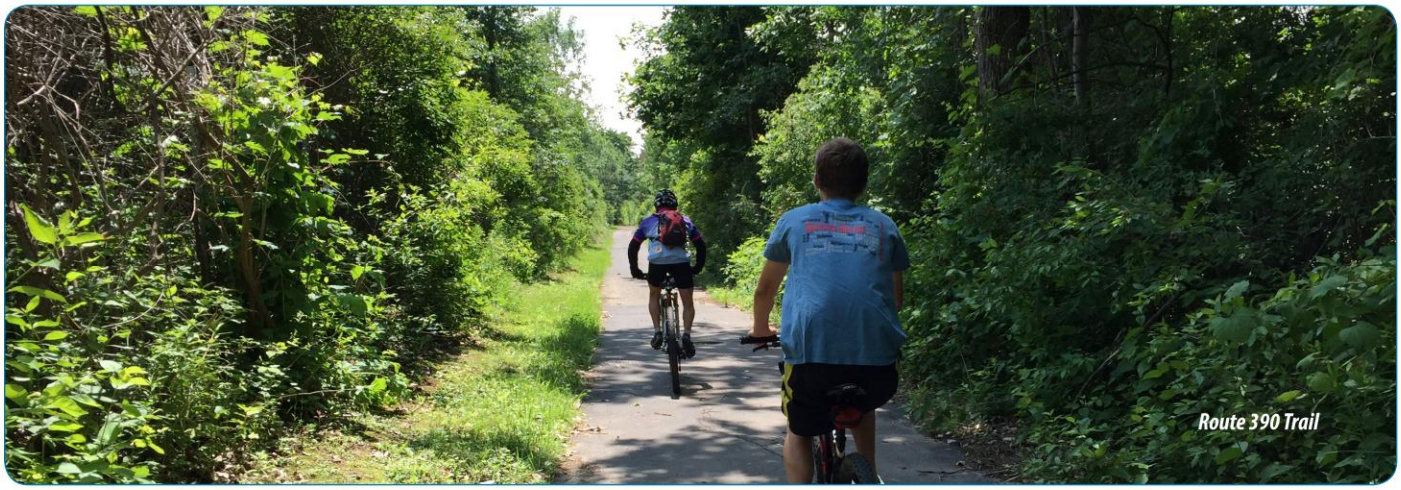
The Town of Parma's 1989 Master Plan, the Village of Hilton's 1977 Master Plan, and the Village of Hilton's 2008 Congestion, Accessibility and Parking Study all identify the Hojack Trail as a potential multi-use trail. Because these communities currently lack convenient access to the regional trail network, the Hojack Trail would help connect them to the network while highlighting the Village of Hilton's business district as a compelling end-of-trail destination.

The Hojack Rail Line Corridor Rails-to-Trails Conversion - Greece to Hilton is included in the Regional Trails Initiative - Phase 1 (GTC, 2002) as a Near-Term implementation project recommendation. However, past efforts to establish trail feasibility have lacked funding and administrative support. At the present time, with funding provided via the Genesee Transportation Council's Unified Planning Work Program, and with the cooperation and support from the participating communities and RG&E, conditions are ripe to set out a conceptual plan for trail development.

The trail amenities as proposed build upon, and are compatible with, the general principles and specific projects found in the planning documents listed below:

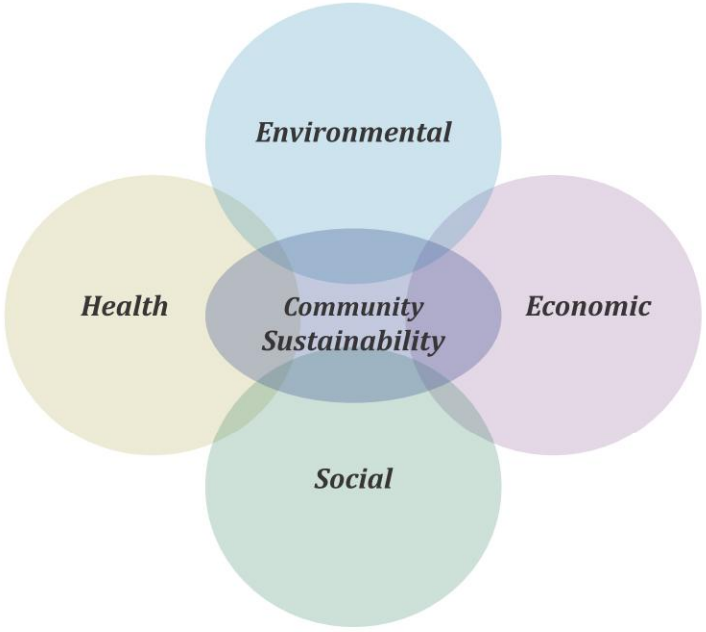
- Long Range Transportation Plan for the Genesee Finger-Lakes Region 2035
- Rochester Bike Sharing Program Study, 2015
- Town of Greece Bicycle and Pedestrian Master Plan, 2014
- Genesee-Finger Lakes Regional Trails Initiative Update, 2014
- Rochester Bicycle Master Plan, 2011
- Genesee-Finger Lakes Historic Transportation Gateway Inventory and Assessment, 2009
- Safe Routes to School Guidebook for the Genesee Finger-Lakes Region, 2009
- The Village of Hilton's 2008 Congestion, Accessibility and Parking Study
- Regional Trails Initiative Final Report & Action Plan: Phase I - Rochester TMA, 2002
- Bicycle and Pedestrian Action Plan for the Rochester Metropolitan Area, 1996
- Bicycle and Pedestrian Action Plan for the Rochester Metropolitan Area, 1996
- The Town of Parma's 1989 Master Plan
- The Village of Hilton's 1977 Master Plan

5. BENEFITS OF ACTIVE TRANSPORTATION



The goal of creating a new multi-use trail as a part of an improved active transportation system is compatible with other community planning efforts related to transportation and sustainability. While pedestrian and bicycle improvements are important to meet the needs of today, they are likely to be even more important in meeting the needs of tomorrow. With the development of this feasibility study, the Towns of Greece and Parma and the Village of Hilton are taking a progressive stance in addressing important issues, such as rising fuel prices, environmental degradation, and health problems related to inactivity. The Hojack Trail corridor connects other active transportation facilities and will help the Town and the region to harvest long-term economic, environmental, health and social benefits of active transportation.

Transportation accounts for more than 25 percent of the carbon dioxide emissions in the United States (EPA, 2014). In addition, transportation is a significant household expense for many people. However, there are other transportation options besides using a motorized vehicle, which include active transportation possibilities such as walking and bicycling. Walking and bicycling as a means of transportation offer environmental, health, economic and social benefits.



Active transportation has benefits in each one of these categories, but the synergy between these varied and disparate benefits results in enhanced community sustainability:

- A local economy that is robust and balanced, with better access to jobs, education and health care.
- Increased health for persons engaging in active transportation, and increased safety for all.
- Ecosystems that thrive as a result of reduced air pollution and reduced greenhouse gas emissions.
- Infrastructure that encourages culturally and socially diverse groups to prosper and connect to the larger community.

5.1 ENVIRONMENTAL BENEFITS

Switching to active transportation reduces emissions of greenhouse gases and other pollutants that contribute to global warming, smog, and acid rain. Greenhouse gases are atmospheric gases - primarily carbon dioxide, methane and nitrous oxide - which trap the sun's heat, making the Earth a greenhouse. Emissions of greenhouse gases enhance the Earth's greenhouse effect, contributing to climate change. Air pollution includes ground level ozone and fine airborne particles, as well as carbon monoxide, nitrogen oxides and sulfur oxides. This mix of substances makes smog (Source Emissions Society, 2007). Air pollution also causes lung cancer and respiratory problems. A study in U.S. cities found that mortality rates were significantly higher in cities with the dirtiest air compared to those with the cleanest air (Krewski et. all, 2004)

Half of the average person's greenhouse gas emissions result from transportation.

- Motor vehicle emissions represent 31% of total carbon dioxide, 81% of carbon monoxide, and 49% of nitrogen oxides released in the U.S. (League of American Bicyclists, 2012).
- Short car trips are much more polluting than longer trips on a per-mile basis.
- 60% of the pollution resulting from auto emissions is released during the first few minutes of operation of a vehicle (LAB, 2012).

The majority of Americans use their cars to make short trips of a mile or less, causing major environmental damage.

- 90% of Americans commute using a personal vehicle (National Historic Travel Survey, 2009).
- The average length of a vehicle trip is less than 10 miles (NHTS, 2009).

Choosing active transportation is an easy way to reduce our environmental impact – bicycling and walking create zero greenhouse gas emissions. A short, four-mile round trip by bicycle keeps about 15 pounds of pollutants out of the air we breathe (Worldwatch Institute). Infrastructure designed to accommodate vehicles is harmful to the environment as well. There are 800 million automobile parking spaces in the U.S., totaling 160 billion square feet of concrete and asphalt. The environmental impact of all these parking spaces is equivalent to 10 percent more carbon dioxide emissions per automobile (Bikes Belong, 2012). Active transportation can reduce air pollution, minimize traffic congestion, and help to lessen our national dependence on petroleum. Bicycling and walking can also serve as the final leg of transit trips to and from other parts of the Rochester region, allowing riders to get between home and their boarding stop and between their disembarking stop and their final destination.

A four mile bike trip keeps 15 pounds of pollutants out of the air we breathe

(Worldwatch Institute)

5.2 HEALTH BENEFITS

The most valuable natural resource of any community is the health of the residents. In 2015, the Centers for Disease Control and Prevention (CDC) reported the following statistics from 2015:

- Obesity has risen dramatically in the last 20 years
- Over one third of U.S. adults - over 78 million people - are obese
- 17% of young people age 2-10 years - over 12.5 million people - are obese
- Overall, adults aged 60 and over were more likely to be obese than younger adults

In Upstate New York, childhood obesity trends exceed or match national trends. In 2004, 21% of Upstate New York 3rd graders were obese, which exceeds the national rate of 17% (Upstate NY, 2004). Childhood overweight and obesity is a precursor for adult obesity. The *Strategic Plan for the Prevention of Childhood Overweight and Obesity in Monroe County, NY 2007-2017*, cites "the physical environment and the lack of affordable and safe recreational venues for many children," as a factor in childhood overweight and obesity.

Overweight and obese children have lowered academic achievement in standardized tests

(California Department of Education, 2005)

Research studies have found that overweight and obese children have lowered academic achievement in standardized test scores (CA Dept of Ed, 2005). Also, findings in other studies show that children who are physically active perform better academically and miss fewer days of school (Dwyer, 1996).

Despite the proven benefits, most people – including more than 50% of American adults – do not get enough physical activity to provide health benefits (CDC, 2012). With this in mind, opportunities for exercise and healthful outdoor activity are more than expendable extras. Parks, trails, and open space resources take on new meaning and value. Active transportation provides an opportunity to incorporate regular physical activity into the daily routine. Opportunities for recreation and active transportation support the health and wellness of local residents, and have significant and quantifiable economic impacts.

50% of American adults do not get enough physical exercise to provide health benefits

(Centers for Disease Control and Prevention, 2012)

Regular physical activity can make a person look and feel better, as well as reduce the risk of disease. Unhealthy diet and physical inactivity can cause or aggravate many chronic diseases and conditions, including type-2 diabetes, hypertension, heart disease, stroke, and some cancers (CDC, 2012). Regular physical activity is an important component of a healthy lifestyle, and aids in the prevention of many chronic diseases, disabling conditions and chronic risk factors (CDC, 2012). Land use and building patterns exacerbate health problems by providing new, disconnected neighborhoods that have few opportunities for walking or biking. In addition, our lifestyles have become increasingly sedentary in our post-industrial society. Walking and bicycling provide an opportunity to simultaneously obtain the benefits of transportation and physical exercise.

Route 390 Trail

5.3 ECONOMIC BENEFITS

Health care costs and insurance rates are escalating, causing serious impacts to the local economy. Lack of physical activity is a contributing factor to a growing number of serious illnesses and health problems among all age groups.

- In 2008, health care costs associated with obesity were estimated at $147 billion (CDC, 2015).
- Medical costs for people who are obese were $1,429 higher than for those of normal weight (CDC, 2015).

In addition to health-related costs, operating a personal automobile is very expensive.

- Of every dollar earned, the average household spends 18 cents on transportation, 94% of which is for buying, maintaining and operating cars, the largest source of household debt after mortgages (American Public Transit Association, 2007).

- The average vehicular commuter spends over $7,500 per year on commuting expenses, which include the cost of gas, vehicle wear and tear, vehicle maintenance, and insurance.

- On average, switching from driving to walking and cycling saves $1.42/mile, money that can be re-invested in the local economy.

For some households, active transportation can even reduce the need for additional cars, which can be a yearly expense between $5,000 and $11,800 (APTA, 2007). With the money saved on a vehicle, or even just the additional parking, fuel and maintenance required to commute in a vehicle, an active commuter can pay for transit expenses, purchase a good quality bicycle, or buy new walking shoes, with money left over. Better bicycling conditions will provide access to recreational and work destinations, schools, public transit, and local shops. This will, in turn, promote additional economic development in the vicinity of these destinations. The number of people bicycling can be a good indicator of a community's livability - a factor that has a profound impact on attracting new residents, businesses, workers, and tourists, all of which contribute towards stimulating the economy.

In Portland, Oregon, it is estimated that by 2040, each dollar they have invested in active transportation infrastructure will result in more than $8 million in benefits. (Gotschi, 2011). Relatively modest investments - comparable to the construction cost of one mile of an urban 4-lane highway - led to tremendous growth in bicycling. Over time, this will produce secondary benefits in the form of fuel and health care savings worth at least eight times the upfront investment. Conversely according to the Rochester Cycling Alliance website, nearly ever dollar we burn in gasoline leaves the Rochester area (RCA, 2012). By developing transportation programs and encouraging active transportation, the local economy would capture these potential savings and keep shoppers centrally located, resulting in increased community reinvestment.

Cities that promote bicycling tend to retain youth, attract young families, and increase social capital

(Indianapolis Bicycle Master Plan)

5.4 SOCIAL BENEFITS

Improving transportation equity by cultivating better walking and bicycling conditions provides mobility for the one-third of people in the United States who do not have cars. This improves access to jobs, education, and health care.

- Improved bicycling conditions add to the vitality and quality of life of the community and provide access to recreational destinations across the region.
- Bicycling and walking is appealing to families looking to engage in new recreational opportunities while increasing opportunities for social interaction and contributing to a sense of community.
- Increased active transportation typically increases safety for motorists, bicyclists, and walkers. For example, in Portland, Oregon, bicycle crashes went down by 50%.

Communities across the county have embraced non-motorized transportation as a popular and beneficial option that residents increasingly expect and visitors actively seek when making choices about where to locate their families. Active transportation can reduce stress and allow for more community interaction. Riding a bicycle allows a commuter to choose a less busy route and by-pass traffic lights. Walkers and cyclists see more of their community than stoplights, white lines and car bumpers, and benefit from the stress relief that accompanies physical exercise.

Studies have shown that the longer the regular commute, the greater amount of stress that a commuter feels (Delmelle, 2013). Stress often leads to fatigue, headaches, and irritable moods, which can subsequently affect work performance and household dynamics. It is easier and less expensive to park a bike than a car, which further reduces the stress of commuting. In addition, a culture dependent on cars encourages urban sprawl, which destroys communities and keeps people isolated from one another.

Land use and building patterns exacerbate health problems by providing new, disconnected neighborhoods that have few opportunities for walking or biking. In addition, our lifestyles have become increasingly sedentary in our post-industrial society. Walking and bicycling provide an opportunity to simultaneously obtain the benefits of transportation and physical exercise.

Route 390 Trail

6. INVENTORY AND ANALYSIS

Existing Conditions, Hojack Corridor

This section contains inventory and analysis of existing conditions in and adjacent to the Hojack Trail Corridor. The topics discussed in this section include the physical and environmental conditions of the study area, property ownership, circulation and transportation, and an assessment of key issues.

6.1 PHYSICAL AND ENVIRONMENTAL CONDITIONS

This section describes the existing environmental conditions within the study area and in some instances, the surrounding area. Information is presented on topography, soils, ecological character, drainage and water-related issues, and land use.

SOILS

The United States Department of Agriculture Natural Resources Conservation Service online mapping tool "Web Soil Survey" has mapped general soil associations and types within the United States. The soil survey indicated that at least 26 different soil types are present within the study area. The soils found in the largest quantities in the study area are identified in **Table 2** on the following page.

The railroad bed however may be comprised of compacted fill material, and not necessarily subject to the properties of the listed soils. This compacted fill provides an excellent base for trail development. The remaining portions of the study area, outside of the railroad bed, are primarily comprised of soils listed in **Table 2**. The characteristics of the soils are variable, with drainage ranging from well drained to very poorly drained. Soil textures in the study area are primarily silty loams.

For trail planning purposes, most of the soils are fundamentally suitable for trail use. However, in select areas, some soils may present an erosion problem, and some soils may have drainage issues. Poorly drained areas of Canandaigua silt loam (Ca) as well as eroded areas of Hilton loam (HlB) may have drainage and erosion issues that will need to be addressed during trail planning and construction.

Table 2: Soils Predominantly Found in Study Area

Abbreviation	*Soil Name*	*Slopes*	*Hydrologic Soil Group & Drainage*
Ca	Canandaigua silt loam	Not specified	C/D, poorly and very poorly drained
CIA	Collamer silt loam	0-2% slopes	C/D, moderately well drained
CIB	Collamer silt loam	2-6% slopes	C/D, moderately well drained
Ee	Eel silt loam	Not specified	B/D, moderately well drained
Hc	Hamlin silt loam	Not specified	B, well drained
HIA	Hilton loam	0-3% slopes	B/D, moderately well drained
HIB	Hilton loam	3-8% slopes	B/D, moderately well drained
Ng	Niagara silt loam	Not specified	C/D, somewhat poorly drained

DRAINAGE AND WATER-RELATED ISSUES

The study area includes streams and wetlands. There are federal and state designated wetlands in or near the study area based on preliminary review of both United States Fish and Wildlife Service (FWS) National Wetlands Inventory (NWI) mapping and the NYSDEC freshwater wetlands mapping database.

Waters of the United States. Waters of the United States as defined by the United States Army Corps of Engineers (Corps), include all lakes, ponds, streams (intermittent and perennial), and wetlands. Wetlands are defined in Section 404 of the Clean Water Act as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions" (EPA, 2001). Jurisdictional wetlands are defined by the presence of three criteria: hydrophytic vegetation, hydric soils, and evidence of wetland hydrology during the growing season (Environmental Laboratory, 1987). However, it has been determined that the Corps does not have jurisdictional authority over waters that are "non-navigable, isolated, and intrastate" (EPA, 2001). Ultimately, the status of all delineated waters will need to be determined during a field visit with a local District Corps representative.

Review of NWI mapping indicates there are federally-mapped wetlands located within the study area, and field visits confirmed this. The federally-mapped wetlands are identified in **Figure 3**. Most of the wetlands are related to drainage throughout the corridor and occur along existing waterways that traverse under the Hojack Trail Corridor via existing culverts and bridges.

New York State Freshwater Wetlands & Protected Streams. The Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law) gives the NYSDEC jurisdiction over state-protected wetlands and adjacent areas (100-foot upland buffer). The Freshwater Wetlands Act requires the NYSDEC to map all state-protected wetlands (typically over 12.4 acres in size) to allow landowners and other interested parties a means to determine where state jurisdictional wetlands exist. Review of NYSDEC mapping indicates that there is one wetland located to the south of the corridor, outside of the 100 foot upland buffer, that is regulated under Article 24 of the Environmental Conservation Law. The state-regulated wetlands are identified in **Figure 3**.

Under Article 15 of the Environmental Conservation Law (Protection of Waters), the NYSDEC has regulatory jurisdiction over any activity that disturbs the beds or banks of protected streams. In addition, small lakes and ponds with a surface area of 10 acres or less, located within the course of a stream, are considered to be part of a stream and are subject to regulation under the stream protection category of Article 15. Protected streams means any stream, or particular portion of a stream that has been assigned by the NYSDEC any of the following classifications or standards: AA, AA(t), A, A(t), B, B(t) or C(t) (6 NYCRR part 701). A classification of AA or A indicates that the best use of the stream is as a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The best usages of Class B waters are primary and secondary contact recreation and fishing. The best usage of Class C waters is fishing. Streams designated (t) indicate that they support trout, and also include those more specifically designated (ts) which support trout spawning. Classification D is unprotected waters and suitable for fishing and non-contact recreation.

These streams, along with all other perennial and intermittent streams in the study area, are also protected by the Corps under Section 404 of the Clean Water Act.

All of the streams within the study zone are Class C waters.

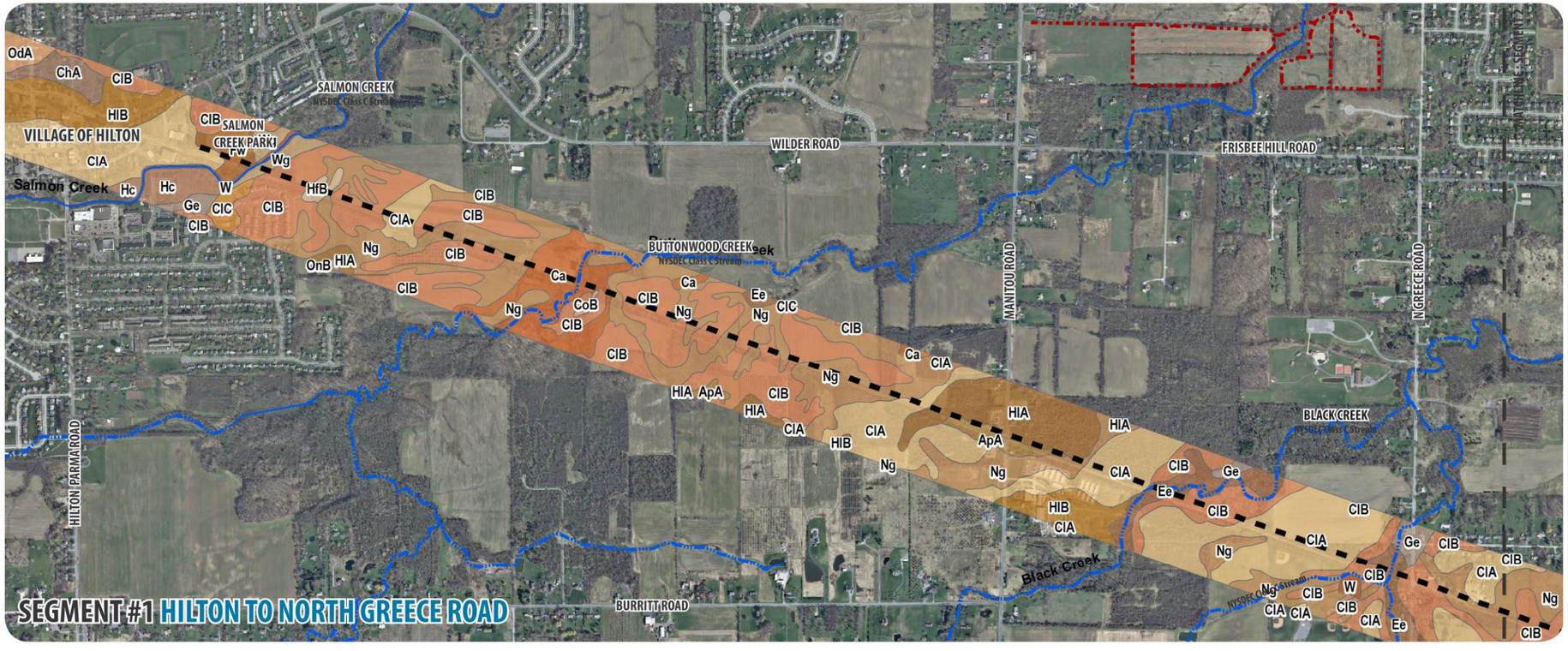
A formal wetland delineation is needed during design development to make a final determination of wetland and stream boundaries. The wetland delineation would need to be conducted according to the three-parameter methodology presented in the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987) and the updated methodologies presented in the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (2009). A final determination of jurisdictional status can only be made after an on-site agency review of identified boundaries.

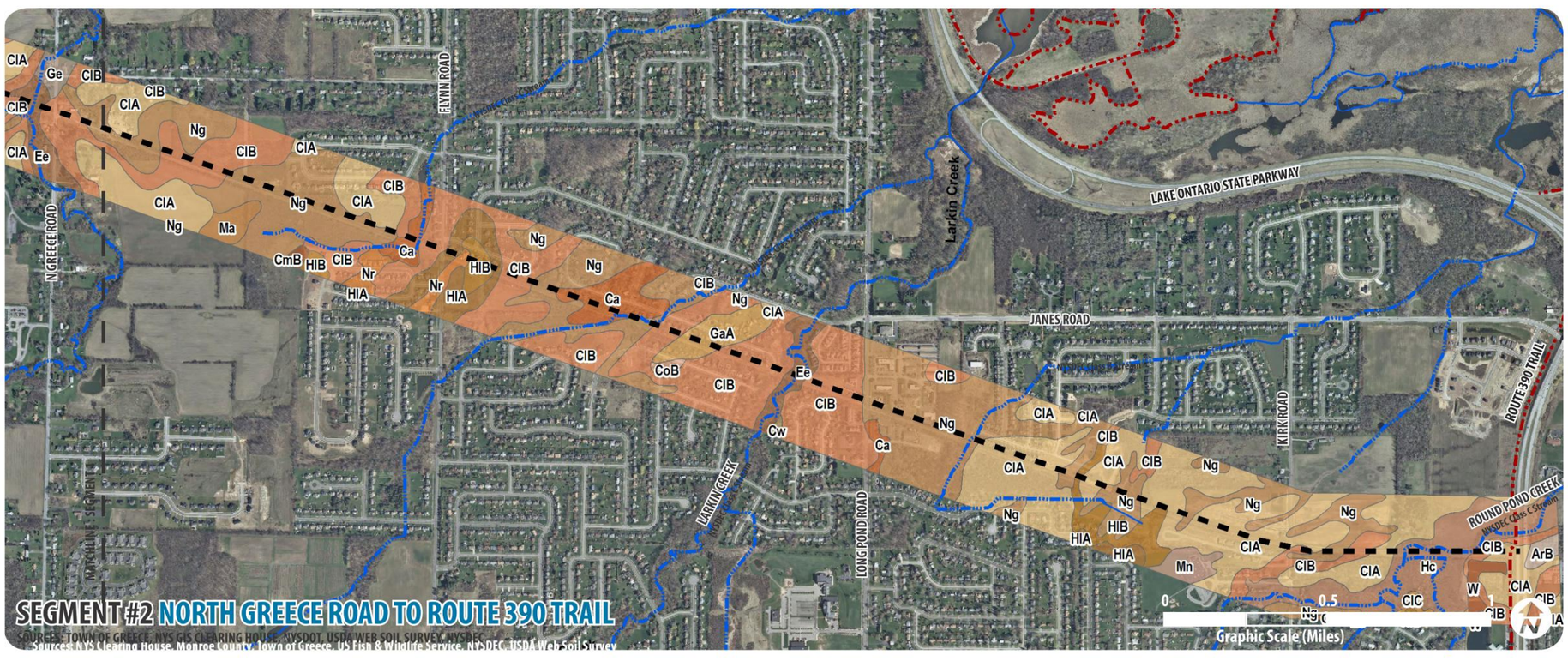
Existing Conditions, Salmon Creek Park

HOJACK TRAIL FEASIBILITY STUDY

TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 2
SOILS





LEGEND

Soil Classifications

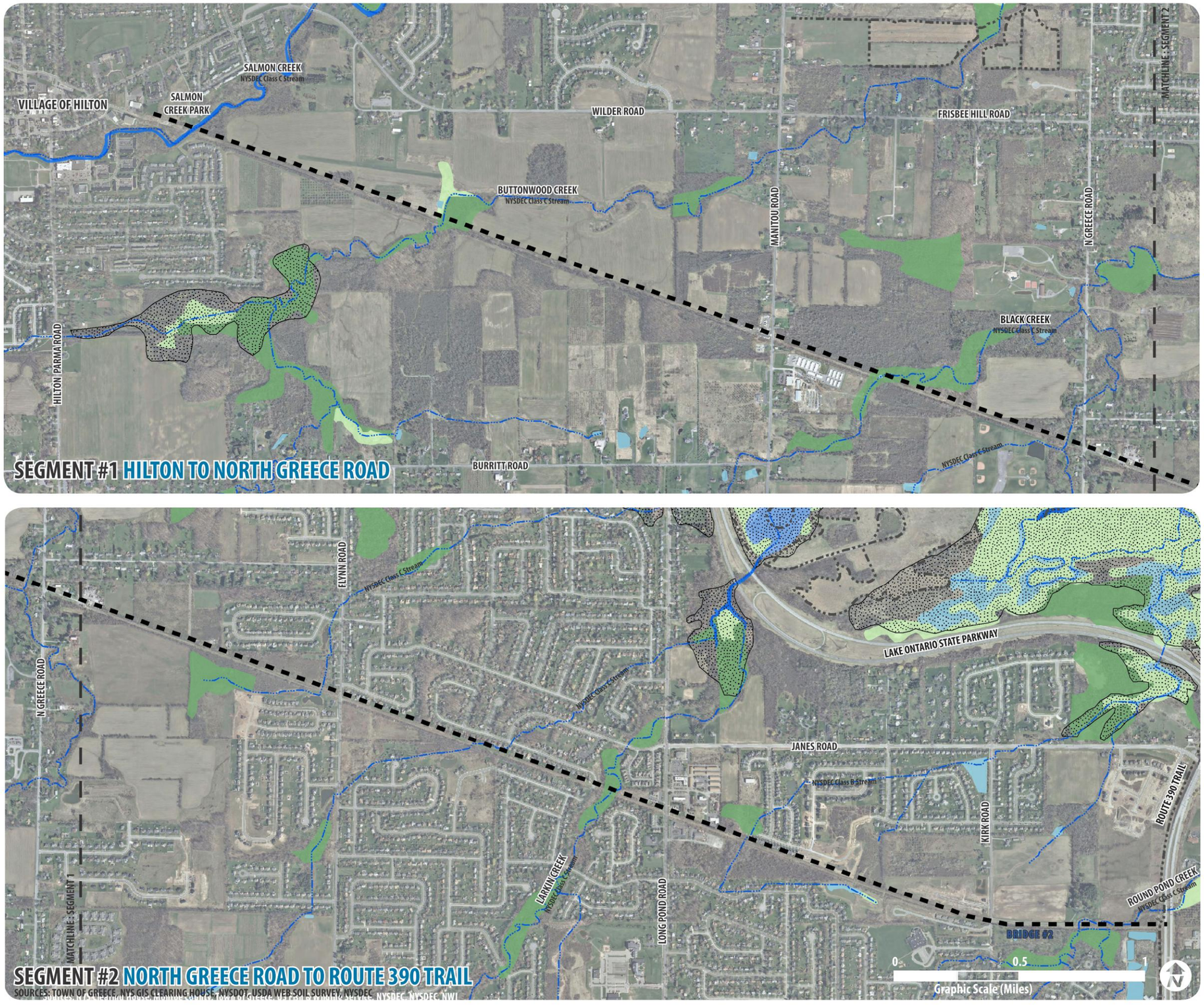
- ApA - Appleton Loam
- ArB - Arkport Very Fine Sandy Loam
- Ca - Canandaigua Silt Loam
- ChA - Churchville Silt Loam
- CIA - Collamer Silt Loam (0-2% slopes)
- CIB - Collamer Silt Loam (2-6% slopes)
- CIC - Collamer Silt Loam (6-12% slopes)
- CmB - Collamer Silt Loam, Loamy Subsoil
- CoB - Colonie Loamy Fine Sand
- Cw - Cut and Fill Land
- Ee - Eel Silt Loam
- Fw - Freshwater Mars
- GaA - Galen Very Fine Sandy Loam
- Ge - Genesee Silt Loam
- Hc - Hamlin Silt Loam
- HfB - Hilton Fine Sandy loam
- HIA - Hilton Loam (0-3% slopes)
- HIB - Hilton Loam (3-8% slopes)
- Ma - Madalin Silty Clay Loam
- Mn - Minoa Very Fine Sandy Loam
- Ng - Niagara Silt Loam
- Nr - Niagara Silt Loam, Loamy Subsoil
- OdA - Odessa Silt Loam
- OnB - Ontario Loam
- W - Water
- Wg - Wayland Soils Complex

HOJACK TRAIL FEASIBILITY STUDY

TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 3

ENVIRONMENTAL FEATURES



SOURCES: TOWN OF GREECE, NYS GIS CLEARING HOUSE, NYSDOT, USDA WEB SOIL SURVEY, NYSDEC, NYSDEC NWI

LEGEND

- NYSDEC Wetlands

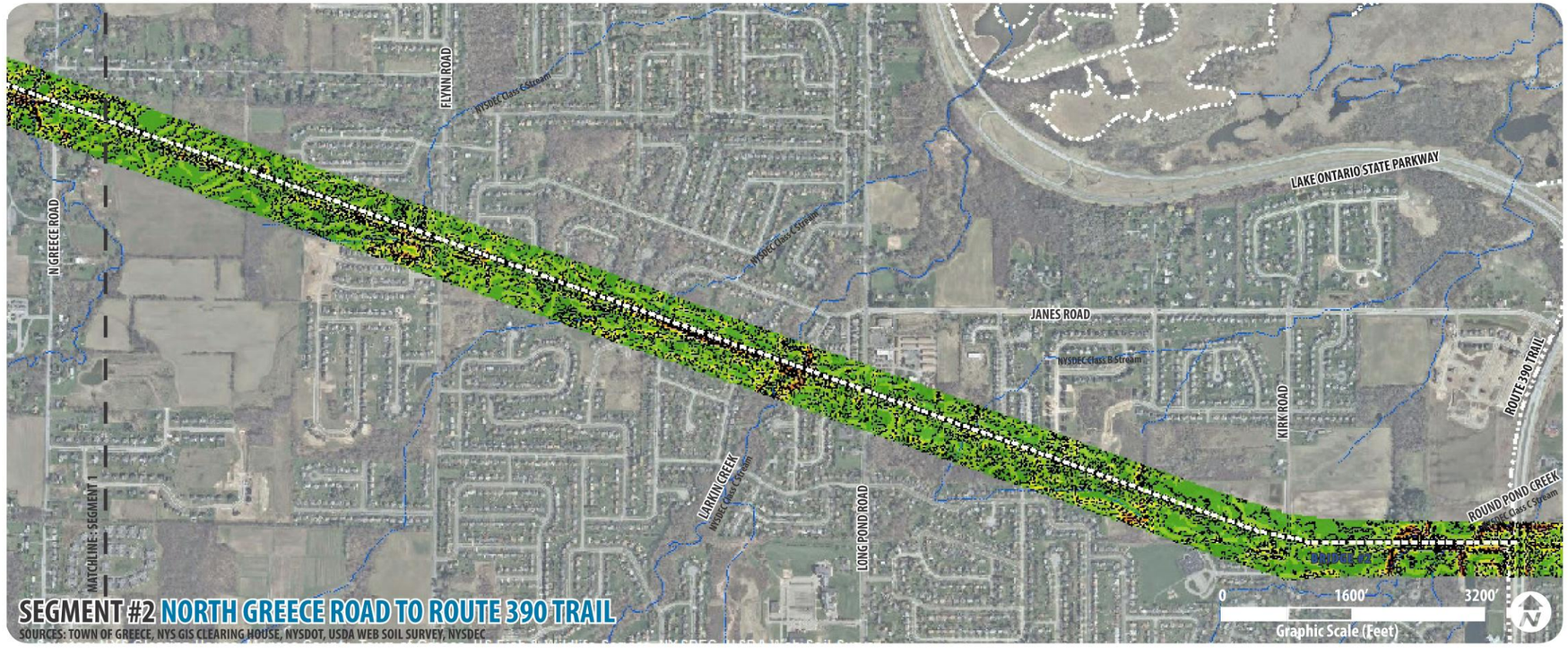
NWI Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub We
- Freshwater Pond
- Lake
- Riverine

HOJACK TRAIL FEASIBILITY STUDY

TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 4
SLOPES



SOURCES: TOWN OF GREECE, NYS GIS CLEARING HOUSE, NYSDOT, USDA WEB SOIL SURVEY, NYSDEC

LEGEND

- Hojack Trail Corridor

Streams

- Streams
- 2ft Contours

% Slope

- 0-2
- 2-5
- 5-10
- 10-20
- 20+

6.2 PROPERTY OWNERSHIP

This section reviews adjacent property ownership, as well as easements and rights of way within the study area.

1. OWNERSHIP

The railroad corridor is owned by RG&E. Property located at the west end of the trail is used year-round by the Village of Hilton for storage and will need to remain accessible for this purpose.

2. ADJACENT PROPERTIES

A substantial number of properties are located adjacent to the study area, resulting in a significant number of property owners that would potentially be affected by the proposed trail improvements.

Concerns that were shared by adjacent property owners were investigated in the course of this study, including:

Potential Trespassing

It is recommended that the Hojack Trail include signage, shown on **Figure 5**, placed at regular intervals alerting trail users to keep off of private property. In addition, existing vegetative buffers will remain to deter trespassers from entering adjacent properties.

Adjoining Property, Hojack Corridor

Cross Access of Farm Equipment.

Eight landowners have been identified who farm land on both sides of the trail and use the RG&E property as a means to access their fields. The Plan does not contemplate changing any landowner agreements. Additional grading may be required to ensure easy access across the trail at these points. Construction details for these areas will be created during design development. Additional signage, examples shown on **Figure 5**, will be placed to inform trail users of farm equipment crossings and to alert farmers of trail crossings.

Hunting on Private Parcels

No hunting on RG&E property is allowed. Several landowners shared concerns about how the trail might impact their ability to hunt on their own adjoining property. Further research has shown that the trail will not impact the ability of landowners to hunt on their land. Signs posted at trailheads when hunting season is open will inform trail users that hunting may be occurring adjacent to the trails.

Hunters must obey all relevant laws and regulations, and all parties should exercise common sense and best safety practices.

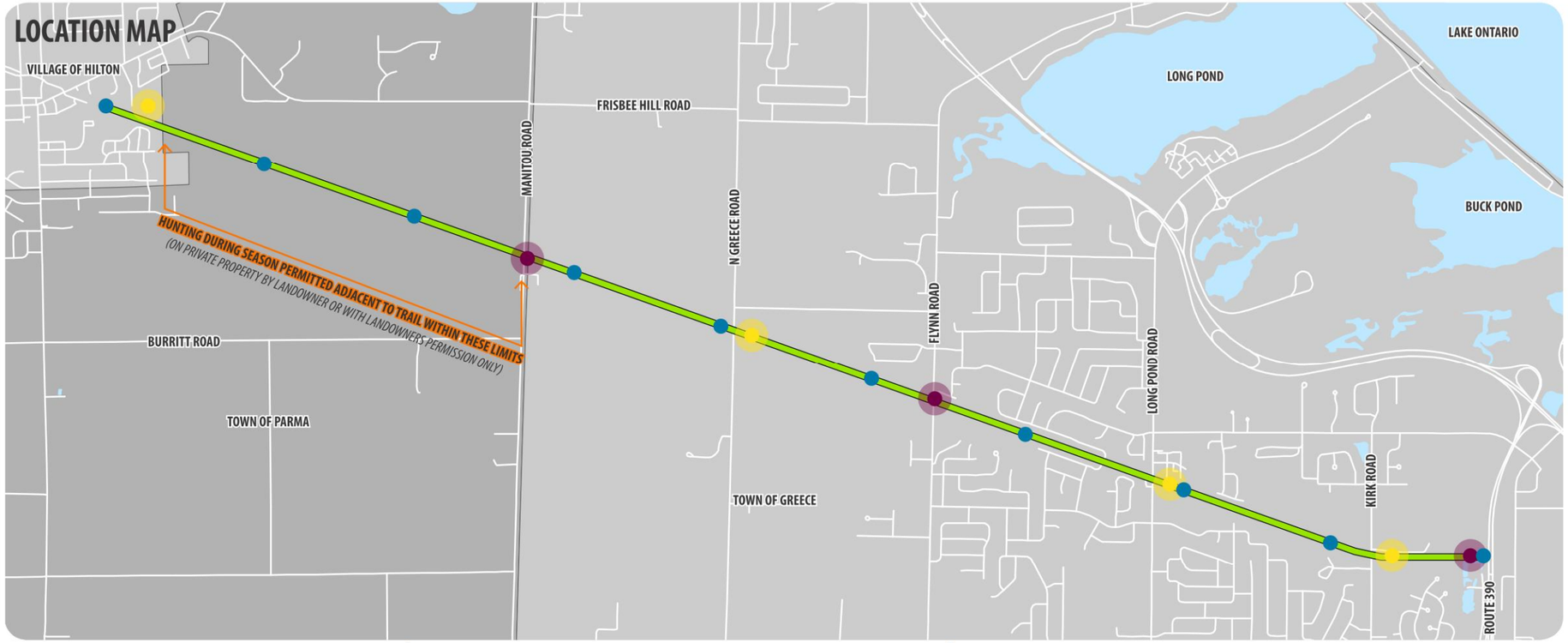
Source: Rail-Trails and Liability, a Primer on Trail Related Liability Issues and Risk Management Techniques created by the Rails to Trails Conservancy.

HOJACK TRAIL FEASIBILITY STUDY

TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 5

PRELIMINARY SIGNAGE SCHEDULE



KIOSK

Photo example from the El Camino Trail in Rochester, NY

TYPES OF LOCATIONS
» Trailheads (existing and proposed)

FREQUENCY
» All primary access points

ANTICIPATED QUANTITY
» 5

INFORMATION
» Trail map with trail length
» Access points and destinations / points of interest
» Connectivity to other trails / paths

DIRECTIONAL SIGN

Photo example from the El Camino Trail in Rochester, NY

TYPES OF LOCATIONS
» Trail intersections

FREQUENCY
» As needed

ANTICIPATED QUANTITY
» 3

INFORMATION
» Destinations / points of interest
» Connectivity to other trails / paths
» Directions

MILEPOST BOLLARD & EMERGENCY LOCATION MARKERS

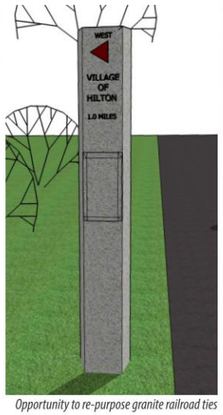
Photo example from the El Camino Trail in Rochester, NY

TYPES OF LOCATIONS
» Along trail corridor
» Emergency markers located on remote sections of the trail where there are no easily identifiable landmarks

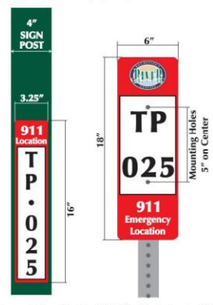
FREQUENCY
» Every 1/4 of a mile

ANTICIPATED QUANTITY
» 34

INFORMATION
» Trail icon
» Trail distance
» Each emergency marker has a unique code specific to its location and is GPS located and entered into the 911 system with notes on how to access each specific location



Opportunity to re-purpose granite railroad ties



Example from Turning Point Park in Rochester, NY

ROAD & TRAIL SIGNAGE EXAMPLES

3. EASEMENTS AND RIGHTS OF WAY

RG&E has a number of easements, which are listed below in **Table 3**.

Existing easements where the trail corridor may effect the conditions of the easement will need to be worked out between the land owner, RG&E, Town of Greece, Town of Parma, and Village of Hilton during the design development phase.

Table 3: RG&E Easements (table below is based on available information at the time of the study)

RG&E ACCESS EASEMENT TYPE	*LOCATION*
License Agreement	300 Kirk Road - Wildlife Sanctuary
License Agreement	To RTC for Wires
License Agreement	Owasco River Railroad - Supplement Agreement
License Agreement	MCPW Sewer Pipe
License Agreement	MCWA Water Line
License Agreement	MCWA Water Pipe
License Agreement	Town of Greece - Driveway - Island Cottage Road
License Agreement	Town of Greece - Sanitary Sewer
License Agreement	Town of Greece - Water Main
License Agreement	Town of Greece / Town of Parma - Water Main
License Agreement	Ogden Telephone - Concrete Pad
License Agreement	Hushard RV - Parking & Storage
License Agreement	Nature Conservancy - Bird Studies Site
License Agreement	Workout Warehouse - 54 Canning Street - Installation of Mile Markers
License Agreement	323 North Greece Road - Shed

6.3 CIRCULATION AND TRANSPORTATION

The following section addresses trail connections, sidewalks, roadways and intersections in the study area.

1. TRAIL CONNECTIONS

Connecting the proposed Hojack Trail System to existing and proposed active transportation corridors is important for trail users. The following section describes existing and proposed trail connections. The eastern end of the Hojack Trail connects to the Route 390 trail, making this trail part of a larger system.

To the south, the Route 390 Trail ends at Route 104. The Erie Canalway Trail is about 3 miles south of the southern end of the Route 390 Trail via on-road and sidewalk connections. NYSDOT and GTC Plans indicate a future connection trail between these.

Traveling north, The Route 390 Trail connects to The Lake Ontario State Parkway Trail which runs east/west and is a part of the Seaway Trail National Scenic Byway.

In addition, the Genesee Riverway Trail is approximately 3 miles east of Route 390 via on-road and sidewalk connections and runs north/south from the City of Rochester to Charlotte at Lake Ontario."

2. SIDEWALKS, ROADWAYS, INTERSECTIONS AND TRAIL ACCESS

The Hojack Trail is accessible from nine points along it's length. From west to east these are:

- The western entrance on Canning Street.
- An existing trailhead at Salmon Creek Park.
- Intersects Manitou Road, North Greece Road, Flynn Road, Bush Creek Drive, Long Pond Road, and Kirk Road.
- The eastern entrance on the Route 390 Trail.

Each road crossing was studied to maximize safety for trail and road users. Roadways within the trail corridor fall under the jurisdiction of NYS Department of Transportation, Monroe County Department of Transportation, and local jurisdiction. Any recommendations will need to be coordinated with the corresponding jurisdiction. Input from NYSDOT and MCDOT has been integrated into the conceptual design. See **Figure 6** for more information.

6.4 HOJACK LINE HISTORY

ERECTED

By the County of Monroe — 1851

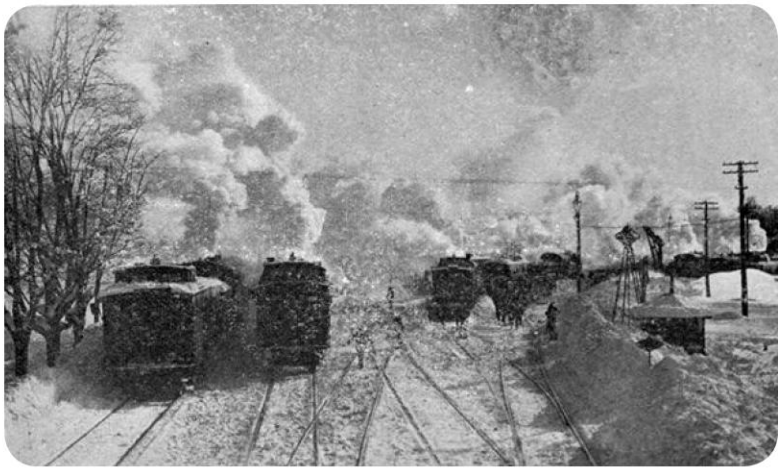
WHAT WAS THERE

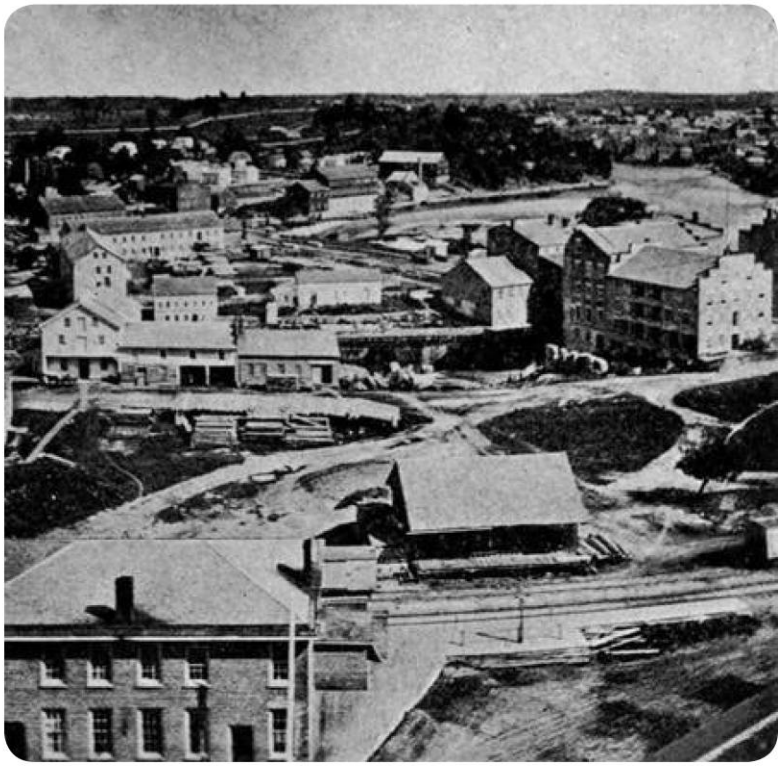
The Rome, Watertown and Ogdensburg Railroad, was commonly referred to as the "Hojack Line." It served the agricultural towns along Lake Ontario which the Erie Canal, located to the south, did not cater to. A slow freight and passenger train, the Hojack had a 100 year history of servicing farmers and mercantiles in the northern counties from Niagara Falls to Oswego. Towns along Lake Ontario prospered as passengers visited their lakeside resorts and villages, and orchards shipped produce easily across the state.

The line ran four passenger trains a day initially and increased to six trains a day by 1863, including a sleeper train to New York City.

"In the upbuilding of this prosperous era the Rome, Watertown & Ogdensburgh had played its own large part. By 1875 it was nearly a quarter of a century old. It was indeed an extremely high grade and prosperous property, the pride, not only of Watertown, which had been so largely responsible for its construction, but indeed of the entire North Country. It had, as we have already seen, as far back as 1866, succeeded in thrusting a line into Oswego, thirty miles west of Richland. [Pg 106] After which it felt that it needed an entrance into Syracuse, then as now, a most important railroad center. To accomplish this entrance it leased, in 1875, the Syracuse Northern Railroad, and then gained at last a firm two-footed stand upon the tremendous main line of the New York Central & Hudson River Railroad... the Rome connection gave the road direct access to Boston, New York, and to the East generally; that at Syracuse made the journey from Northern New York to western points much easier and more direct, than it had been through the Rome gateway." - Edward Hungerford, 1922.

HOJACK TRAIL RAIL BED DURING WINTER





WATERTOWN IN 1865
Showing the First Passenger Station of the Potsdam & Watertown.
Taken from the Woodruff House Tower.

For an extensive history of the Hojack Line, see "The Story of the Rome, Watertown and Ogdensbugh Railroad" by Edward Hungerford

The line fell on hard times and was 'all but defunct' by 1880.

In 1914 the railroad was purchased and operated by New York Central Rail Road.

WHAT IS THERE NOW

Existing Conditions, Hojack Corridor

Because of its slow speed, the construction of better north-south roads in the state, and consolidation in the rail industry, the route fell into neglect, and the line into bankruptcy. It's last customer was Xerox, who used it to transport freight from Sodus, NY. Today, most of the track has been abandoned, including the stretch along the Genesee River in Rochester that extended down to Seneca Park. The Hojack Swing Bridge that was situated in the middle of the Genesee at Charlotte has been removed. Some of the line is being used by other RR companies as utility right- of-ways, or sits abandoned. Much of the track has been converted to trails, including the El Camino Trail in Rochester that now follows the Genesee track along the east side of the river.

The path of the line still traverses communities along the lake. Evidence of its economic impact can be seen through all the abandoned or re-purposed factories and storehouses along the route. Following Hojack Avenue through Hilton, one can see all the former factories and stores that prospered along the line. The Hilton Station now serves several small business, including a salon. A milepost marker,"P 104"still stands along the route in the village.

Sources: New York Historic, Matt Conheady, Friends of Webster Trails, The Story of the Rome, Watertown, and Ogdensburgh Railroad

ROAD CROSSING #1 MANITOU ROAD

EXISTING CONDITIONS

Roadway Jurisdiction: New York State DOT
Posted Speed: 40mph
Roadway Section: 34' wide (10' travel lanes, 7' shoulders) +/-
Annual Average Daily Traffic: 5735 vehicles per day
(NYS Traffic Data Viewer, 2013)
Functional Classification: Minor arterial
(NYSDOT Functional Class Viewer)
Bicycle Level of Service Rating: D
(2014 Greece Bicycle and Pedestrian Master Plan)

RECOMMENDATIONS

- Crosswalk striping and signage. Refer to Typical Road Crossing detail.
- Recommend using alternate Rectangular Rapid Flashing Beacon (RRFB).
- Trailhead and parking located east of North Greece Road, north of trail.

ROAD CROSSING #2 NORTH GREECE ROAD

EXISTING CONDITIONS

Roadway Jurisdiction: Monroe County
Posted Speed: 35mph
Roadway Section: 34' wide (11' travel lanes, 6' shoulders) +/-
Annual Average Daily Traffic: 3368 vehicles per day
(NYS Traffic Data Viewer, 2013)
Functional Classification: Major collector
(NYSDOT Functional Class Viewer)
Bicycle Level of Service Rating: A
(2014 Greece Bicycle and Pedestrian Master Plan)

RECOMMENDATIONS

- Crosswalk striping and signage. Refer to Typical Road Crossing detail.

ROAD CROSSING #3 FLYNN ROAD

EXISTING CONDITIONS

Roadway Jurisdiction: Monroe County
Posted Speed: 35mph
Roadway Section: 34' wide (11' travel lanes, 6' shoulders) +/-
Annual Average Daily Traffic: 2160 vehicles per day
(NYSDOT Traffic Data Viewer, 2013)
Functional Classification: Major collector
(NYSDOT Functional Class Viewer)
Bicycle Level of Service Rating: C
(2014 Greece Bicycle and Pedestrian Master Plan)

RECOMMENDATIONS

- Crosswalk striping and signage. Refer to Typical Road Crossing detail.

HOJACK TRAIL FEASIBILITY STUDY

TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 6
EXISTING CONDITIONS & RECOMMENDATIONS
ROADWAY CROSSINGS

POTENTIAL TRAILHEAD & PARKING WITHIN RGE ROW

Refer to trailhead concept details for design

- 2-Way Vehicular access
- Parking for 8-10 cars, including a minimum of 1 ADA space
- Necessary turn around space
- Trail signage kiosk
- Rest area with seating for trail users

SIGHT DISTANCE

- All roads, from a visual assessment by B&L transportation engineers, appear to have safe sight distances from both vehicle and trail user perspective.
- Necessary clearing of vegetation near roadway may be required.

Note: The Bicycle Level of Service (Bicycle LOS) Model, a bicycling conditions performance measure, is a "supply-side" criterion. It is an objective measure of the bicycling conditions of a roadway which provides an evaluation of bicyclists' perceived safety and comfort with respect to motor vehicle traffic and roadway conditions.

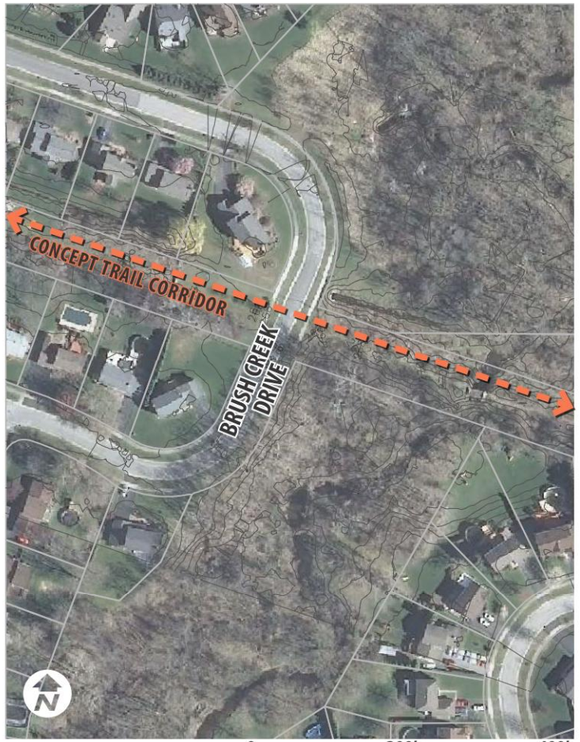
The Bicycle LOS Model includes the following factors in determining the bicycling suitability of the study roadways:

- bike lane or paved shoulder
- outside lane width
- traffic volume, speed, and type
- pavement surface condition
- presence of on-street parking

NOTE

Roadways within the trail corridor fall under the jurisdiction of NYS Department of Transportation, Monroe County Department of Transportation, and local. Road crossing recommendations and trail head driveway locations are conceptual in nature and will be subject to further study, review and approvals before advancing to design development and implementation.

ROAD CROSSING #4 BRUSH CREEK DRIVE



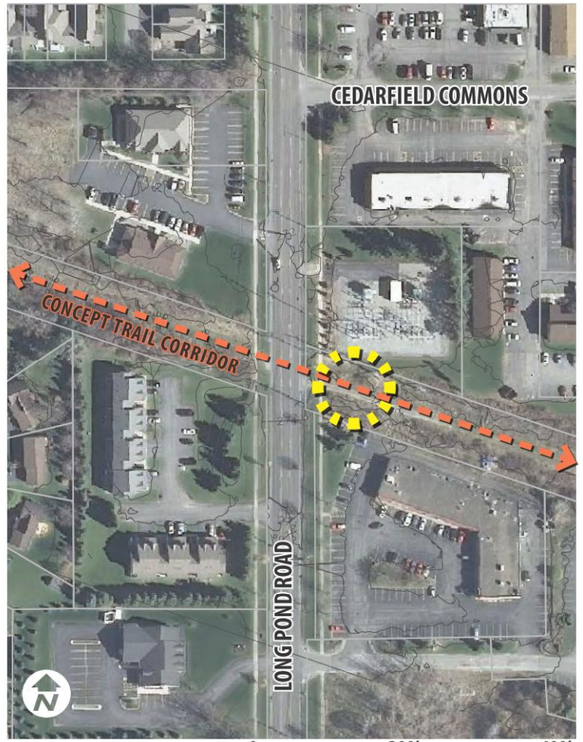
EXISTING CONDITIONS

Roadway Jurisdiction: Town of Greece
Posted Speed: 25mph
Roadway Section: 24' wide (10' travel lanes, 2' concrete gutters)
Annual Average Daily Traffic: N/A
Functional Classification: Local road
(NYSDOT Functional Class Viewer)
Bicycle Level of Service Rating: N/A

RECOMMENDATIONS

- Crosswalk striping and signage. Refer to Typical Road Crossing detail.

ROAD CROSSING #5 LONG POND ROAD



EXISTING CONDITIONS

Roadway Jurisdiction: Monroe County
Posted Speed: 35mph
Roadway Section: 38' wide (12' travel lanes, 10' center turn lane, 2' shoulders)
Annual Average Daily Traffic: 5247 vehicles per day
(NYS Traffic Data Viewer, 2013)
Functional Classification: Minor arterial
(NYSDOT Functional Class Viewer)
Bicycle Level of Service Rating: C
(2014 Greece Bicycle and Pedestrian Master Plan)

RECOMMENDATIONS

- Crosswalk striping and signage. Refer to Typical Road Crossing detail.
- Recommend using alternate Rectangular Rapid Flashing Beacon (RRFB).
- Trailhead and parking located east of Long Pond Road, north of trail.
- Recommend striping center turn lane for trail approach, both sides. **A raised median could be installed as a traffic calming measure and provide a refuge area.*

ROAD CROSSING #6 KIRK ROAD

EXISTING CONDITIONS

Roadway Jurisdiction: Monroe County
Posted Speed: 35mph
Roadway Section: 34' wide (11' travel lanes, 6' shoulders)
Annual Average Daily Traffic: N/A
Functional Classification: Local road
(NYSDOT Functional Class Viewer)
Bicycle Level of Service Rating: A
(2014 Greece Bicycle and Pedestrian Master Plan)

RECOMMENDATIONS

- Crosswalk striping and signage. Refer to Typical Road Crossing detail.
- Trailhead and parking located east of Kirk Road, north of trail.

HOJACK TRAIL FEASIBILITY STUDY

TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 6
EXISTING CONDITIONS & RECOMMENDATIONS
ROADWAY CROSSINGS
SHEET 2 OF 2

POTENTIAL TRAILHEAD & PARKING WITHIN RGE ROW
Refer to Typical Trailhead Detail

- 2-Way Vehicular access
- Parking for 8-10 cars, including a minimum of 1 ADA space
- Necessary turn around space
- Trail signage kiosk
- Rest area with seating for trail users

SIGHT DISTANCE

- All roads, from a visual assessment by B&L transportation engineers, appear to have safe sight distances from both vehicle and trail user perspective.
- Necessary clearing of vegetation near roadway may be required.

Note: The Bicycle Level of Service (Bicycle LOS) Model, a bicycling conditions performance measure, is a "supply-side" criterion. It is an objective measure of the bicycling conditions of a roadway which provides an evaluation of bicyclists' perceived safety and comfort with respect to motor vehicle traffic and roadway conditions.

The Bicycle LOS Model includes the following factors in determining the bicycling suitability of the study roadways:

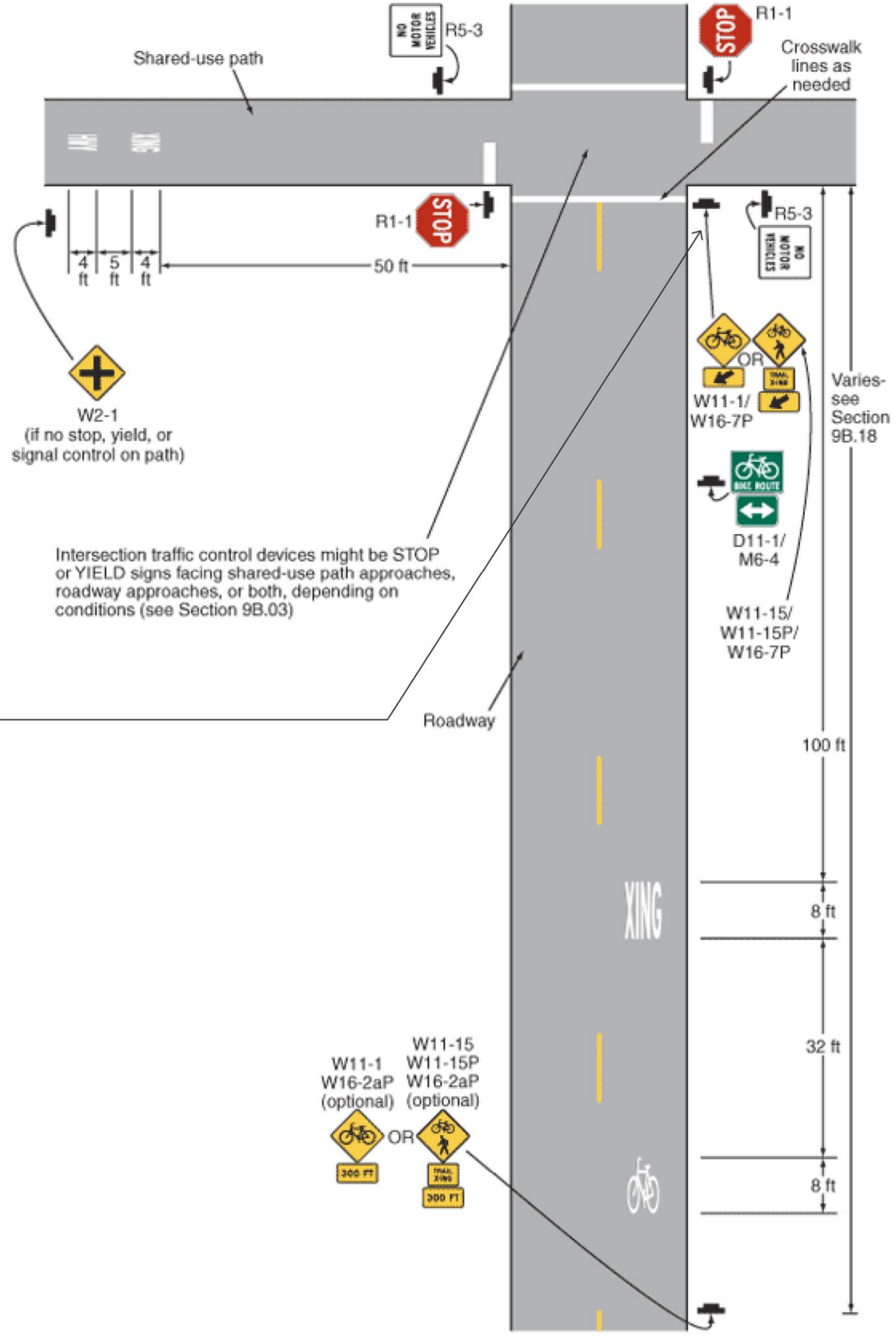
- bike lane or paved shoulder
- outside lane width
- traffic volume, speed, and type
- pavement surface condition
- presence of on-street parking

NOTE

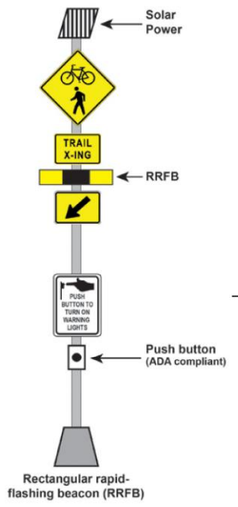
Roadways within the trail corridor fall under the jurisdiction of NYS Department of Transportation, Monroe County Department of Transportation, and local. Road crossing recommendations and trail head driveway locations are conceptual in nature and will be subject to further study, review and approvals before advancing to design development and implementation.

MUTCD FIGURE 9B-7. EXAMPLE OF SIGNING AND MARKINGS FOR A SHARED-USE PATH CROSSING

FOR REFERENCE ONLY, NOT TO SCALE



ALTERNATE: RECTANGULAR RAPID FLASHING BEACON



BENEFITS OF USING RECTANGULAR RAPID FLASH BEACON

ACCORDING TO THE FEDERAL HIGHWAY ADMINISTRATION

- "Rectangular Rapid Flash Beacon (RRFB)s are a lower cost alternative to traffic signals and hybrid signals that are shown to increase driver yielding behavior at crosswalks significantly when supplementing standard pedestrian crossing warning signs and markings.
- An official FHWA-sponsored experimental implementation and evaluation conducted in St. Petersburg, Florida found that RRFBs at pedestrian crosswalks are dramatically more effective at increasing driver yielding rates to pedestrians than traditional overhead beacons.
- The novelty and unique nature of the stutter flash may elicit a greater response from drivers than traditional methods.
- The addition of RRFB may also increase the safety effectiveness of other treatments, such as the use of advance yield markings with YIELD (or STOP) HERE FOR PEDESTRIANS signs. These signs and markings are used to reduce the incidence of multiple-threat crashes at crosswalks on multi-lane roads (i.e., crashes where a vehicle in one lane stops to allow a pedestrian to cross the street while a vehicle in an adjacent lane, traveling in the same direction, strikes the pedestrian), but alone they only have a small effect on overall driver yielding rates."

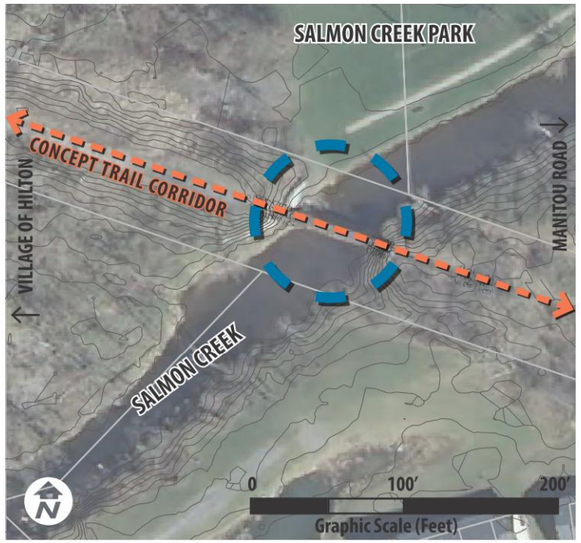
HOJACK TRAIL FEASIBILITY STUDY
TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 7
ROAD CROSSING STANDARDS

Notes

- Majority of trail surface to be stonedust, as required by RG&E. Asphalt surface recommended near at-grade crossings.
- Road crossings to comply with the American Association of State Highway Transportation Officials (AASHTO) Guide for Development of Bicycle Facilities. Signage to comply with the Manual on Uniform Traffic Control Devices (MUTCD).

BRIDGE #1 SALMON CREEK



EXISTING CONDITIONS

Approximate Span: 82 ft.
Approximate Width: 9 ft total, 4 ft. pedestrian width.
Structure Construction

- Single span
- Riveted steel girders supported on cast-in-place concrete abutments
- Steel grate decking supported on steel stringers and floor beams
- 4 ft. height steel tube handrails
- Visual observations of sub structures show some rehab may be required. Structural assessment of structures is recommended for future phases.

BRIDGE #2 SMITH CREEK

EXISTING CONDITIONS

Approximate Span: 24 ft.
Approximate Width: 12 ft.
Structure Construction

- Single span
- Riveted steel girders supported on cast-in-place concrete abutments
- Timber decking
- Visual observations of sub structures show some rehab may be required. Structural assessment of structures is recommended for future phases.

BRIDGE #3 EAST OF KIRK ROAD

EXISTING CONDITIONS

Approximate Span: 40 ft.
Approximate Width: 12 ft.
Structure Construction

- Single span
- Riveted steel girders supported on cast-in-place concrete abutments
- Timber decking
- Visual observations of sub structures show some rehab may be required. Structural assessment of structures is recommended for future phases.

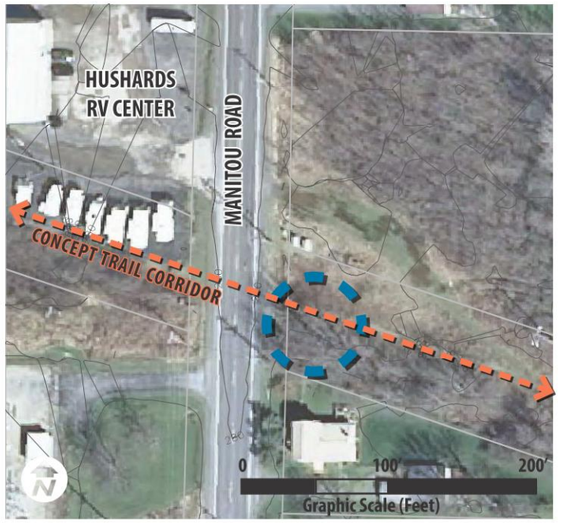
HOJACK TRAIL FEASIBILITY STUDY
TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 8
EXISTING CONDITIONS BRIDGES

CULVERT #1 BUTTONWOOD CREEK

EXISTING CONDITIONS
Approximate Span: 20 ft.
Approximate Width: 24 ft.
Structure Construction:
- Concrete box
- Rise: 6 ft. 6 in.
- Water depth: 4 ft.
- Concrete head walls & wing walls

CULVERT #2 EAST OF MANITOU ROAD



EXISTING CONDITIONS
Approximate Pipe Length: 24 ft.
Approximate Pipe Diameter: 24 in.
Structure Construction:
- Cast iron pipe
- Water depth: 3 in.
- Concrete head walls

CULVERT #3 BLACK CREEK

EXISTING CONDITIONS
Approximate Span: 14 ft. 6 in.
Approximate Width: 21 ft.
Structure Construction:
- Concrete box
- Rise: 8 ft. 6in.
- Water depth: 2 ft.
- Concrete head walls

HOJACK TRAIL FEASIBILITY STUDY
TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 9
EXISTING CONDITIONS CULVERTS

CULVERT #4 WEST OF LONG POND ROAD

EXISTING CONDITIONS
Approximate Pipe Length: 50 ft.
Approximate Pipe Diameter: 8 ft.
Structure Construction:
- Reinforced concrete pipe
- Concrete end sections

RECOMMENDED IMPROVEMENTS (TYPICAL)

- Handrails are recommended as required. Refer to Recommended Bridge Improvements figure for examples of handrails.

6.5 OPPORTUNITIES AND CONSTRAINTS

The following opportunities and constraints were considered in relation to the study area and possible trail routing possibilities.

1. OPPORTUNITIES

The following characteristics of the trail corridor are presented as opportunities, or elements that can be exploited to the advantage of the project.

ADA Accessible. The trail area is relatively flat which lends itself to an accessible trail.

Trail Connections. The eastern ends of the Hojack Trail connects to the Route 390 trail. The Route 390 trail connects to the Lake Ontario State Parkway Trail that runs east/west and is a part of the Seaway Trail National Scenic Byway.

In addition, the Route 390 trail is connected to the nearby Erie Canalway Trail and Genesee Riverway Trail via on road and sidewalk connections.

Historic Resources. The trail will not only provide access to open space, but also to historic resources. The Hojack Trail has an extensively documented history which lends itself to interpretive and educational possibilities that could be developed along the trail corridor.

Habitat Diversity. The trail corridor crosses through different habitats and vegetative cover types, which provides opportunities for environmental education related to wildlife habitat, species diversity, and other related topics. Even if there were no formal interpretive efforts, the corridor provides access and opportunities to view a natural landscape in a relatively developed area.

Active Transportation. Developing a trail system that provides connections to numerous destinations, as well as the roadway/sidewalk network, and a number of other trails provides a significant opportunity to advance the regional active transportation network. Active transportation is a means of getting around that is powered by human energy, primarily walking and bicycling. Offering ample opportunities for people to engage in active transportation helps to address health problems and environmental concerns.

2. CONSTRAINTS

The following issues are presented as constraints, or elements that may challenge the success of the project.

Safety. The trail crosses a number of roads. Special precautions will be necessary to insure user safety at road crossings. See **Figure 6**.

3. BOTH

Some issues are presented as both an opportunity and a constraint, because they have both advantages and challenges for the project's success.

Isolated Areas. Throughout the trail corridor, there are isolated areas with low natural surveillance. Natural areas of relative solitude are uncommon in urban, developed areas. The opportunity to be alone in natural surroundings is an opportunity for many people to enjoy the peace and quiet of nature. However, for other people, isolated areas present a constraint, as they may have concerns regarding their personal security.

Proximity of Residential Properties. The railroad corridor is in close proximity to a substantial number of properties, resulting in numerous property owners that would potentially be affected by proposed trail improvements. Nearby residential communities would have the benefit of access to the active transportation corridor. Refer to **Appendix D** for supporting information on the Community Impacts of Trails.

Route 390 Trail

7. ALTERNATIVES CONSIDERED

Adjoining Property, Hojack Corridor

This chapter describes the alternatives considered for the Greece Hojack Trail System, and describes the potential trail user groups.

7.1 PLANNING FOR TRAIL USERS

The following section discusses different types of trail users, including bicyclists, pedestrians, emerging user groups, and non-motorized winter sports enthusiasts. The Hojack trail is a multiuse trail and has been designed to welcome as many appropriate user groups as possible. Please also see **Appendix B** for a discussion of managing conflict between trail users.

1. BICYCLISTS

Bicyclists require an average minimum width of 40 inches to operate. When traveling alongside motor vehicles, a width of five feet or more is recommended to allow bicyclists to safely maneuver (AASHTO). While the minimum operating space and bicycle facility width remains relatively the same between users, the skills, confidence and preferences of bicyclists vary significantly. The challenge in planning for bicycle facilities is designing for the diversity of user skills. According to the Federal Highway Administration (FHWA), the Federal policy goal for bicycling is "to accommodate current use and encourage increased use, while enhancing safety."

The FHWA identifies the following types of bicycle users:

- Group A: Advanced Bicyclists
- Group B: Basic Bicyclists
- Group C: Children

Defining the bicyclist skill level through three groups and designing for the specific groups helps to refine roadway and path treatments. A description of the three different types of bicycle users by the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities is provided on the following page.

Group A: Advanced Bicyclists.

Group A is comprised of advanced or experienced riders who are generally using their bicycles as they would a motor vehicle. They are riding for convenience and speed and want direct access to destinations with minimal detours and delays. Advanced riders are typically comfortable riding with motor vehicles in traffic. They comprise the majority of the current users of collector and arterial streets and are best served by the following:

- Direct and convenient access to destinations usually via the existing street and highway system.
- The opportunity to operate at maximum speed with minimum delays.
- Sufficient operating space on the roadway or shoulder to reduce or preferably eliminate the need for either the bicyclist or the motor vehicle operator to change position when passing. Ideally for Group A riders, all roads would be "bicycle friendly."

Group B: Basic Bicyclists.

Group B is comprised of basic adult and teenage riders who may also be using their bicycles for transportation purposes, such as getting to the store or visiting friends. Group B bicyclists are less confident of their ability to operate in traffic without special provisions for bicycles. Basic riders prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width to allow easy overtaking by faster motor vehicles. Thus, basic riders are comfortable riding on neighborhood streets and shared use paths and prefer designated facilities such as bike lanes or wide shoulder lanes on busier streets. Some will develop greater skills and progress to the advanced level, but there will always be millions of basic bicyclists.

Group B Bicyclists prefer:

- Comfortable access to destinations, preferably by a direct route, using either low-speed, low traffic-volume streets or designated bicycle facilities, avoiding routes with high volume or high traffic speeds.
- Well-defined separation of bicycles and motor vehicles on arterial and collector streets (bike lanes or shoulders) or separate bike paths.

Group B bicyclists would be best served by designated bicycle facilities on key routes through main travel corridors with lower volume rates and similar travel times.

Group C: Children.

Group C bicyclists are children riding on their own or with their parents. This group may not travel as fast as their adult counterparts, but still require access to key destinations in their community, such as schools, convenience stores and recreational facilities. It is important to make sure children do not develop a false sense of security if they are encouraged to ride on a busy street. Group C bicyclists prefer the following:

- Access to key destinations surrounding residential areas, including schools, recreation facilities, shopping, or other residential areas.
- Residential streets with low motor vehicle speed limits and volumes linked with shared use paths and busier streets with well-defined pavement markings between bicycle and motor vehicles.
- Well-defined separation of bicycles and motor vehicles on arterial and collector streets linked with shared use paths and other bicycle facilities.

Group C bicyclists would be best served by routes that provide access to key destinations, but keep them off of busy roads, as safety is more important than travel time.

Table 4: Pedestrian Characteristics by Age

AGE GROUP	*CHARACTERISTICS*
Infants and Toddlers 0-4	Learning to walk Require constant adult supervision Developing peripheral vision, depth perception Act impulsively and unpredictably
Young Children 5-8	Increasing independence but still require supervision Limited peripheral vision and poor depth perception Act impulsively and unpredictably Susceptible to darting out at intersections
Preteens 9-14	Poor judgment Sense of invulnerability Improved awareness of traffic environment
High School Aged 14-18	Poor judgment Feel invincible
Adults 19-40	Active Fully aware of traffic environment
Middle Aged Adults 41-65	Still active May experience slowing of reflexes, range of motion, and observational skills
Senior Adults 65+	Difficulty crossing street High fatality rate if hit

2. PEDESTRIANS

On average, two people walking side-by-side or passing one another generally require 4.67 feet of space, while two people in wheelchairs need a minimum of 5 feet to pass one another (AASHTO). While the minimum operating space and pedestrian facility width are relatively the same between users, the skills, confidence and preferences of pedestrians vary. These variations are mostly a result of differences in age and differences in physical, cognitive and sensory abilities.

The 2010 New York State Supplement to the National Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways 2009 Edition mandates that crossings be designed to accommodate a walking speed of 3.5 feet per second. This walking speed shall be used in the design of any crossing facilities.

The 2004 AASHTO Pedestrian Guide provides an overview regarding different types of pedestrians. It is more difficult to classify pedestrians into the same types of categories presented for bicyclists. Pedestrians exhibit a wide range of physical, cognitive, and sensory abilities and disabilities. All pedestrians are part of the transportation mix and should be anticipated in the design of pedestrian facilities. **Table 4** lists some of the common characteristics of pedestrians at various ages.

Both AASHTO and the FHWA note that there is no single "standard pedestrian" and that the transportation network should accommodate a variety of pedestrians. For example, children and adults perceive their surroundings differently. Children require adult supervision in order to navigate the transportation system safely and independently. Children sometimes walk more slowly than adults, and have a lower eye height. Older adults also have different needs. This group of pedestrians requires more time to cross the street, desires more predictable surfaces, benefits from handrails in steep areas and places to rest along their route. Older pedestrians are also more likely to be killed or seriously injured in a crash. Because our population is aging, the needs of older pedestrians will continue to increase.

In addition, some pedestrians have limited mobility. This can be due to physical disabilities, as well as carrying packages, pushing strollers, or otherwise transporting items. The ability to reach a destination depends on a person's speed, coordination, endurance, and the types of obstacles, grades and cross-slopes he or she encounters

Source: AASHTO Pedestrian Guide, 2004; and FHWA Bicycle & Pedestrian Program.

3. EMERGING USER GROUPS

The following section briefly summarizes a study conducted by Bruce Landis, Theodore Petrisch and Herman Huang and sponsored by the FHWA, "Characteristics of Emerging Road Users and Their Safety", Publication No. FHWAHRT-04-103, printed in October 2004.

Emerging road and trail users constitute an increasing portion of transportation system users. With the development of new technologies and changing demographics, devices such as kick scooters, inline skates, hand cycles, and recumbent bicycles are becoming more common than they were even ten years ago. Electric personal transporter devices (e.g., the Segway™) are relatively new technologies that are now appearing on paths and roadways around the country. Additionally, the American population is aging, and the number of people using mobility assistive devices (such as manual wheelchairs, powered wheelchairs, and powered scooters) is increasing.

Emerging User Types include:

- Inline skates
- Kick scooters
- Strollers
- Recumbent bicycles
- Bicycle trailers
- Power wheelchairs
- Skateboards
- Electric bicycles
- Tandems
- Segway TM
- Manual wheelchairs
- Assistive power scooters
- Adult tricycles
- Hand cycles

With the increase in the number of emerging users comes a greater need to design and build suitable facilities. Many communities throughout the United States have adopted the AASHTO Guide to the Development of Bicycle Facilities as a standard for bike lane, shared roadway, and shared use trail design. As its title implies, the guide is written with bicyclists in mind, so its recommendations are based on the physical dimensions and operating characteristics of bicyclists. Emerging users have different characteristics from bicyclists, and as such, trails designed and built to accommodate bicyclists may not meet the needs of these emerging users.

The findings of this study demonstrate that there is great diversity in the operating characteristics of various road and trail user types. AASHTO's design bicycle length of 6 feet and width of 30 inches were adequate for the majority of observed users. However, bicycle trailers and recumbent bicycles exceeded the design length. Power wheelchairs exceeded the design width. The recommended two-way trail width of 10 feet gave most users traveling single-file in opposite directions enough room to pass each other, though some only barely. The recommended two-way trail width of 10 feet was not wide enough for many user types to complete a three-point turn. The growing need to accommodate emerging users is not restricted to off-street shared use paths. The results of this research are valuable in determining how to better accommodate emerging user groups.

4. NON-MOTORIZED WINTER SPORTS ENTHUSIASTS

With a lengthy season of winter weather, sports that take advantage of cold and snow are standard in Upstate New York. Popular non-motorized winter trail uses include cross-country skiing and snowshoeing. Other less frequently practiced types of non-motorized winter sports include dog sledding, snow biking (cycling, usually with a mountain bike, on snow and/or ice), skibobbing (using a bicycle-type frame attached to skis instead of wheels) and skijoring (cross-country skiers pulled by dogs).

Winter trail uses are generally physically demanding, requiring endurance and skill. Winter sports enthusiasts can often utilize hiking, biking, or multi-use trails when they are covered with snow. Cross country ski trails are designed specifically for skiing and are often a system of looped trails of varying difficulty over rolling terrain in a park-like setting. Other winter uses are often prohibited along designated ski trails unless there is space alongside the ski tracks for the additional use. Ski trails are, however, often compatible with a variety of summer uses. Many formal ski trails are groomed for skiers while other trails are designed for backcountry skiing without mechanized grooming. Narrow ski trails often restrict users to traveling in only one direction from the trailhead while wider ski trails are often groomed with two sets of tracks for two-way traffic. Cross country ski trails are often rated to signify their comparative level of difficulty. While a linear trail may not be the preferred terrain for cross country skiers, it is likely that skiers would utilize the Hojack Trail System.

Information on winter sports compiled from the NY Statewide Trails Plan, 2010 and the NJ Trails Plan Update, 2008.

5. EQUESTRIANS

During public meetings the local equestrian community voiced their interest in using the Hojack trail. Although the FHWA clarified from the AASHTO Guide for Developing Bicycle Facilities that "Equestrians and other nonmotorized recreational use may be allowed on shared use paths and trails that use Federal-aid transportation funds," RG&E is the property owner and will need to maintain access at all times to the electrical transmission lines. Due to the conflicts that could arise from this condition, equestrians have been removed as a potential trail user within the Hojack Trail study area.

6. POTENTIAL AREAS OF CONFLICT BETWEEN USERS

Multi-use trails, when they are well designed, carefully maintained, and effectively managed, are a significant community resource. However, trails can have a number of conflicts and challenges. These can be addressed by physical design and management responses. Potential conflicts on the Hojack Trail System include those conflicts between different types of trail users, between motorists and trail users at road crossings, and between trail users and property owners. **Appendix B** discusses ways to manage conflict. The trail and facilities proposed for the Hojack Trail System are designed to accommodate most trail users described in this section.

7.2 SEQRA DOCUMENTATION AND PERMITTING PROCESS

Project implementation may involve potentially significant impacts to the environment from construction activities. The following is a framework to comply with applicable State and Federal permitting requirements. Further permitting and coordination may be required and shall be verified during preliminary design.

1. SEQRA DOCUMENTATION

The Hojack Trail System is subject to State Environmental Quality Review Act (SEQRA) review because the actions proposed may potentially impact the environment. The Feasibility Study is a Type I Action because the construction of the trail will involve the physical alteration of 10 acres or more. The SEQRA process for this project may involve a coordinated review as follows:

- The Project Sponsor will complete Part I of a Full Environmental Assessment Form (FEAF), identify all other involved agencies and transmit the FEAF to the involved agencies along with a notice that a lead agency must be agreed upon within 30 calendar days of the date the FEAF was transmitted to them.
- The lead agency will complete Part 2 and if needed, Part 3 of the FEAF.
- The lead agency will determine the significance of the environmental impact within 20 calendar days of its establishment as lead agency, or within 20 calendar days of its receipt of all information it may reasonably need to make a determination of significance, whichever is later.
- The lead agency must immediately prepare, file, publish and distribute the determination of significance in accordance with 6 CRR-NY Part 617.12.

Detailed instructions for each step of the SEQRA review process can be found on the New York State Department of Environmental Conservation website:
http://www.dec.ny.gov/permits/357.html

8. RECOMMENDATIONS

Adjoining Property, Hojack Corridor

8.1 PREFERRED TRAIL ALIGNMENT

The Hojack Trail has a clear preferred alignment along the former Hojack Rail Line. This alignment is ideal for several reasons.

- The existing infrastructure including bridges, culverts and former railroad bed provide a solid corridor for future trail construction, possibly reducing the need for new structures which could minimize cost.
- Most of the nearby roads do not cross the rail line, which allows for a relatively safe and uninterrupted trail experience.
- It creates a bicycle and pedestrian connection between the Village of Hilton and the Route 390 Trail.
- The entire trail length will be on RG&E land. Coordination between the Town of Greece, Town of Parma and Village of Hilton will be necessary to determine easements, access and maintenance of the Trail within the right-of-way.

See **Figure 10** for alignment details.

8.2 DESIGN DETAILS

The Hojack Trail study was primarily focused on assessing the feasibility of the trail. However, preliminary design decisions were made to allow for estimating the cost of trail development. The following design elements are recommended.

TRAIL DESIGN AND MATERIALS

Two potential surface materials were considered for the trail: asphalt and stone dust. Asphalt is the preferred surface of many cyclists because it enables them to move more quickly. However pedestrians tend to prefer stone dust because it is an easier surface for walking and running and because it slows down cyclists. Stone dust also has lower repair costs.

The Trail surface will be 10' wide stone dust surface, as required by RG&E who will need access to the trail corridor at all times. Additionally, stone dust is pedestrian friendly, ADA accessible, and inexpensive to repair. The trail will have a minimum 2' shoulder to comply with AASHTO standards.

Crushed stone subbase for the trail surface will be of a suitable depth to support heavy maintenance vehicles.

At intersections, the trail should be paved with an asphalt apron. The asphalt area should extend a minimum of 10 feet on each side of the crossing to help reduce the amount of gravel scattered along the path by bicycles.

See **Figure 11** for typical trail details for stone dust trails and asphalt aprons.

ROAD CROSSINGS

Several different options were considered to maximize safety at road crossings, including gates and bollards and flashing beacons.

- The use of either gates or bollards were analyzed for use at road crossings to prevent vehicle entry. Gates were selected as the preferred alternative because they can be opened to allow maintenance and emergency vehicles. RG&E review will be required during design development.

- Signage and pavement markings are necessary at road crossings to inform both vehicles and trail users of the intersection. An alternate option is to include rectangular rapid flashing beacons along with the signs as an extra protection measure.

GATEWAYS, TRAILHEADS AND INTERPRETIVE SIGNAGE

Gateways. Each trailhead presents an opportunity to define the character of the trail. Trail gateways have been designed to utilize locally salvaged railroad materials to reflect the history of the site. Pier caps could be constructed from local stone, recycled steel or salvaged railroad tie plates. Piers could be constructed from recycled railroad ties, with metal strapping used to define the structure. The gateways would welcome trail users as they enter the trail. **Figure 12** illustrates a proposed trail gateway.

Trailheads and Interpretive Signage. Trailheads include site amenities to define trail character and provide information. Three new trailheads are proposed along the length of the trail at North Greece Road, Long Pond Road, and Kirk Road. Each trailhead should have parking, as well as an informational kiosk with trail maps.

Figure 13 indicates proposed trailhead locations.

Existing Conditions, Hojack Corridor

GUIDE RAILS, SITE FURNITURE AND ACCESS CONTROLS

Guide rails, site furniture and access control features should be included to increase trail safety and comfort for trail users. They must be located a minimum of 3' from the trail edge to allow RG&E trucks full access.

Guide rails. In select areas of the trail near existing culverts and bridges, pedestrian guiderails may be necessary to keep trail users safe. Low guiderails are also recommended along new parking areas at each trailhead to protect trail users from vehicles entering the trail corridor. Timber guide rails are recommended. A detail is shown on **Figure 11**.

Site Furniture. Locally sourced limestone slabs provide attractive, inexpensive, maintenance-free seating. Clusters of two or three boulders provide seating areas, which are recommended at regular intervals along the trail and at trailheads. Bicycle racks are recommended in select locations.

Access Control. Trail access control gates are recommended at primary trail entrances. The trail access gates can be a standard-issue gate, or the railroad theme could be used to inspire more interesting gates. **Figure 12** illustrates a preliminary design concept for a railroad- themed access gate. Access to the trail needs to be limited to bicycles, pedestrians, emergency vehicles and RG&E maintenance vehicles. Other motorized vehicles will be restricted through the use of these access gates and signage. Final design of access controls will need to be reviewed and approved by RG&E

8.3 PHASING

At 6.3 miles in length, the Hojack Trail is a significant undertaking. Based on available funding, the project may need to be constructed in phases over time. Phasing identifies a logical implementation strategy. Each trail phase was designed so that it can function as a stand-alone project and contribute to regional active transportation. This included the consideration of trail entrances and the design of connecting loop systems using existing roadways. See **Figure 15** for details

Phase 1A: Existing 390 Trail to Long Pond Road

Phase 1A will begin at the already established Route 390 trail and end at Long Pond Road. The terminating point of Phase 1A will provide connections to the existing sidewalk system along Long Pond Road; linking neighborhoods and community destinations to the north and south with the trail.

Phase 1B: Long Pond Road to North Greece Road

Phase 1B will begin at the terminus of Phase 1A, Long Pond Road and will be constructed from Long Pond Road to North Greece Road. The terminating point of Phase 1B will provide on-road connections to the neighborhoods and community destinations to the north and south.

Phase 2: North Greece Road to Village of Hilton

Phase 2, the final phase of trail development, will extend through the Town of Greece and Town of Parma into the Village of Hilton. The Phase 2 4.0 mile trail will terminate in the Village of Hilton at Canning Street and will provide for future connections west.

HOJACK TRAIL FEASIBILITY STUDY

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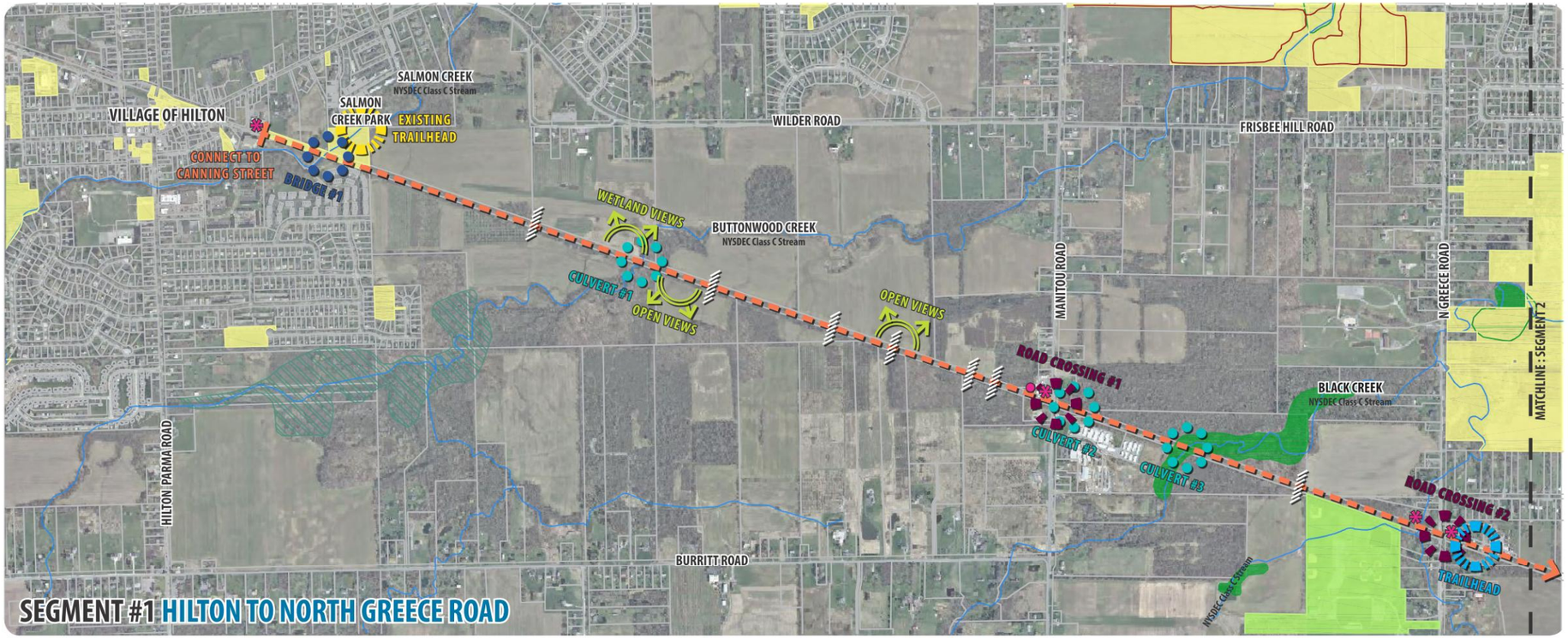
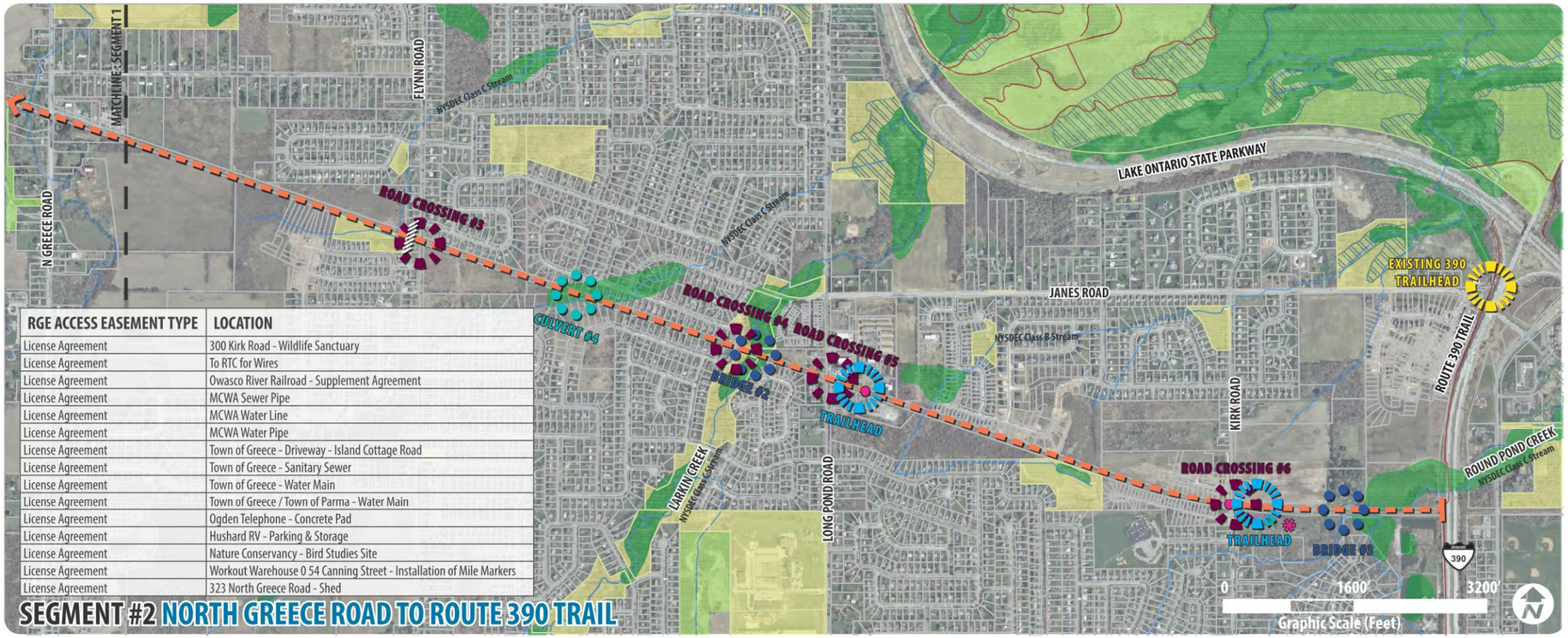
FIGURE 10

RECOMMENDED TRAIL IMPROVEMENTS





RGE ACCESS EASEMENT TYPE	LOCATION
License Agreement	300 Kirk Road - Wildlife Sanctuary
License Agreement	To RTC for Wires
License Agreement	Owasco River Railroad - Supplement Agreement
License Agreement	MCWA Sewer Pipe
License Agreement	MCWA Water Line
License Agreement	MCWA Water Pipe
License Agreement	Town of Greece - Driveway - Island Cottage Road
License Agreement	Town of Greece - Sanitary Sewer
License Agreement	Town of Greece - Water Main
License Agreement	Town of Greece / Town of Parma - Water Main
License Agreement	Ogden Telephone - Concrete Pad
License Agreement	Hushard RV - Parking & Storage
License Agreement	Nature Conservancy - Bird Studies Site
License Agreement	Workout Warehouse 0 54 Canning Street - Installation of Mile Markers
License Agreement	323 North Greece Road - Shed

LEGEND

PROPOSED HOJACK TRAIL (6.5 +/- Miles)
10' wide stonedust with asphalt approaches at road crossings. Shared-use ADA compliant surface. (Currently owned by RG&E. Trail to conform with AASHTO, ADA, and MUTCD design standards)

ROAD CROSSINGS ENHANCEMENTS
Refer to Typical Road Crossing detail.

NEW TRAILHEAD WITH PARKING & ACCESS
Refer to trailhead concept details.

UTILIZE EXISTING TRAILHEAD PARKING & ACCESS

EXISTING BRIDGES
Recommended improvements to approach, decking & handrails.

EXISTING CULVERTS
Recommended addition of handrails as required.

EXISTING TRAIL ACCESS/FARM CROSSINGS
Maintain farm crossing access. Enhance existing neighborhood connections.

OPEN VIEW AREAS
Views provide opportunities for seating/resting areas with trail signage/wayfinding. Locate ever 300yds.

UTILITY ISSUES
Existing concerns with nearby utility poles, subsurface utilities, or low hanging utility lines.

RGE ACCESS EASEMENTS
Existing easements. Will require coordination with landowners and RGE.

EXISTING TRAILS
EXISTING STREAMS/CREEKS
EXISTING PARKS
EXISTING MUNICIPAL OWNED LAND
FEDERAL JURISDICTION WETLANDS
STATE JURISDICTION WETLANDS

Barton & Loguidice

HOJACK TRAIL FEASIBILITY STUDY

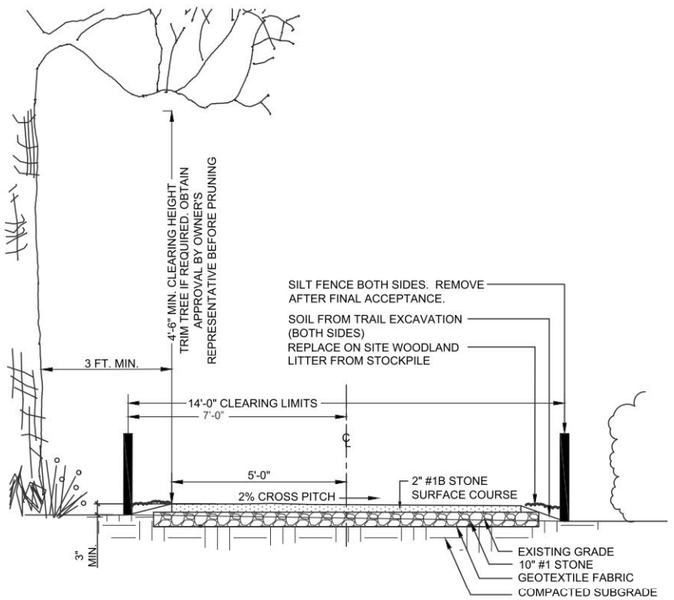
TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 11

TYPICAL TRAIL CONCEPT DETAILS

SHEET 1 OF 2

CONSTRUCTION DETAIL *FOR REFERENCE ONLY*



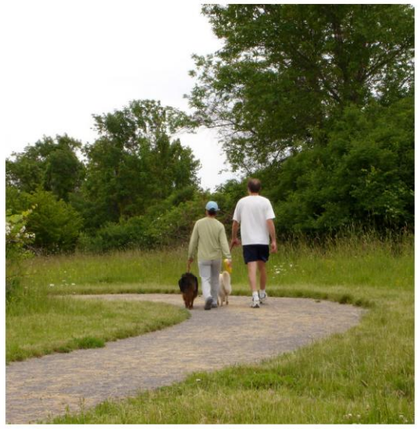
NOTE:
RESTORE AND SEED ALL DISTURBED AREAS WITH RESTORATION SEED MIX

10' WIDE STONEDUST TRAIL
Scale: NOT TO SCALE

EXAMPLES

Corbett's Glen, Brighton

El Camino Trail, Rochester



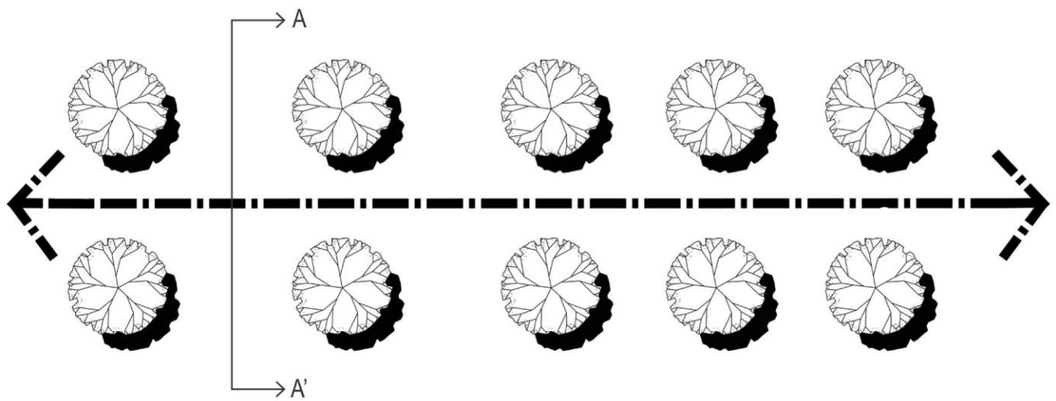
Erie Canalway Trail, Brighton

Channing Philbrick Park, Penfield

TRAIL SURFACE BENEFITS

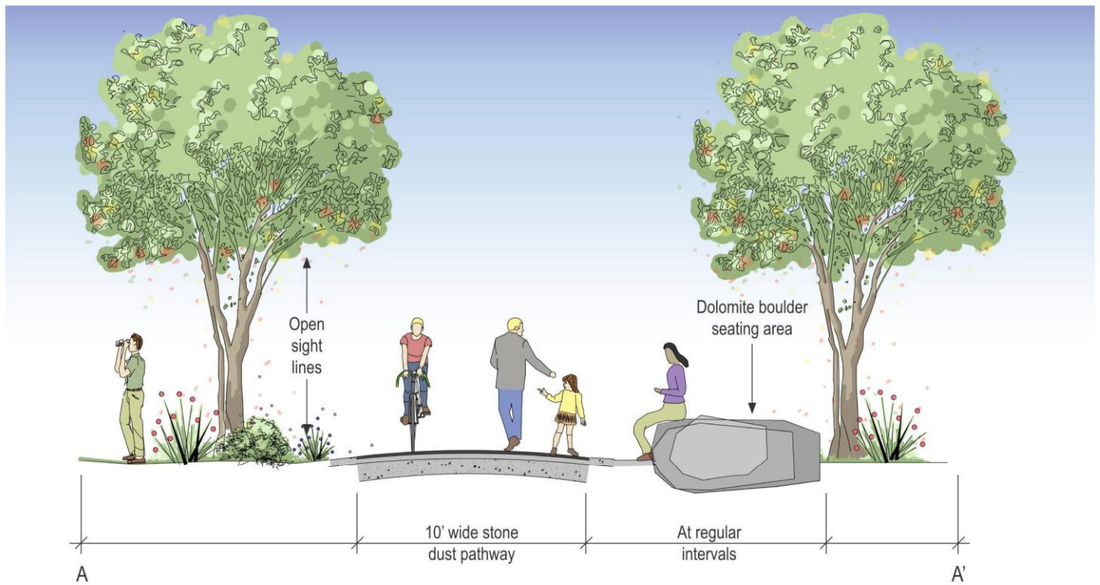
- AASHTO compliant stonedust trails are ADA compliant allowing for users of all mobility levels.
- Acts as a speed reducer for bicyclists, creating a safer environment for all users.
- Installation cost is lower up front.
- Stonedust supports RG&E traffic.
- Limestone is a locally available material.

PLAN



10' wide stone dust pathway

GRAPHIC SECTION



HOJACK TRAIL FEASIBILITY STUDY

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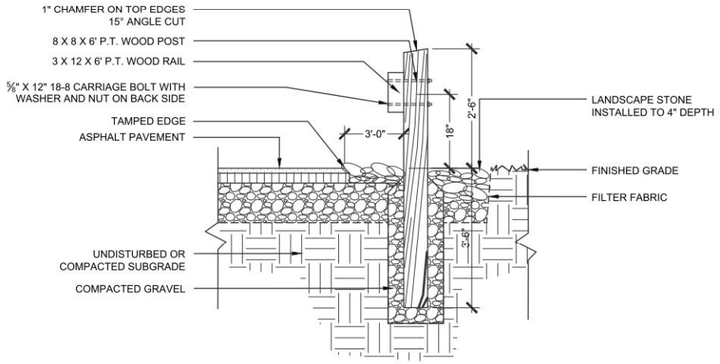
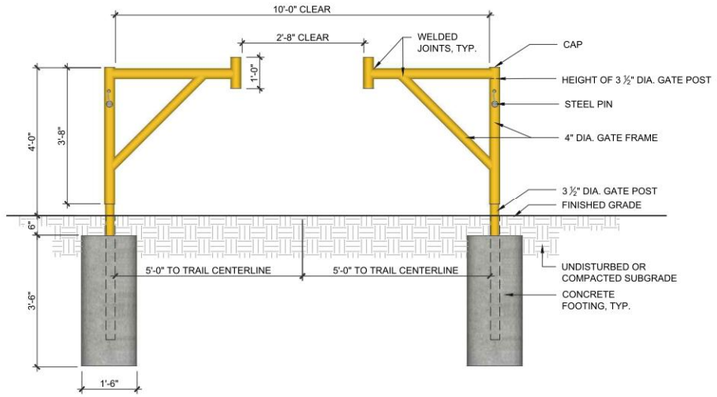
NEW YORK

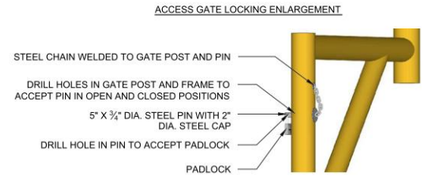
FIGURE 11

TYPICAL TRAIL CONCEPT DETAILS

SHEET 2 OF 2







TRAIL ACCESS GATE OPTION 1
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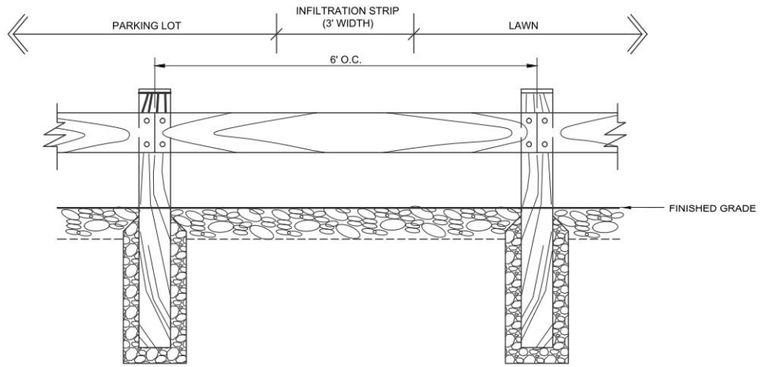

TIMBER GUIDE RAIL
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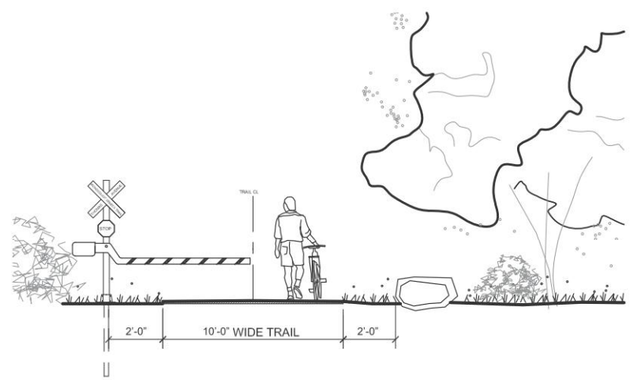
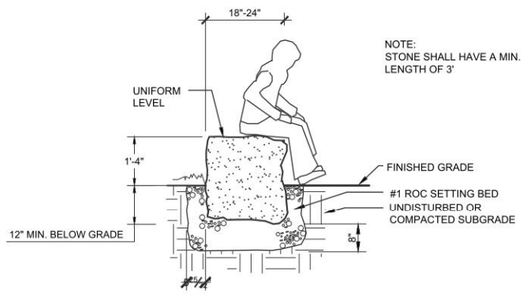
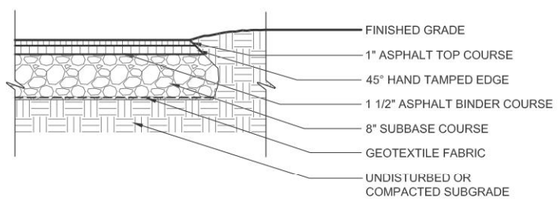


TRAIL ACCESS GATE OPTION 2
Scale: NOT TO SCALE



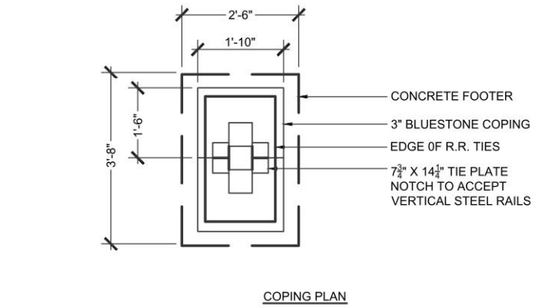
STONE SEAT
Scale: NOT TO SCALE



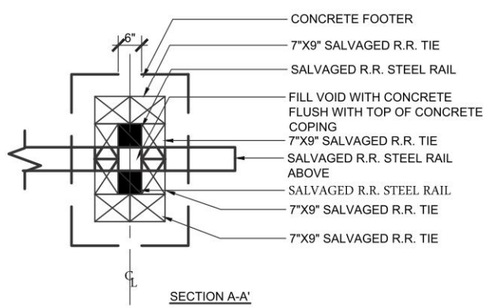
LIGHT DUTY ASPHALT PAVEMENT
Scale: NOT TO SCALE

RECLAIMED RAIL GATEWAY (LOCATED AT TRAILHEADS)

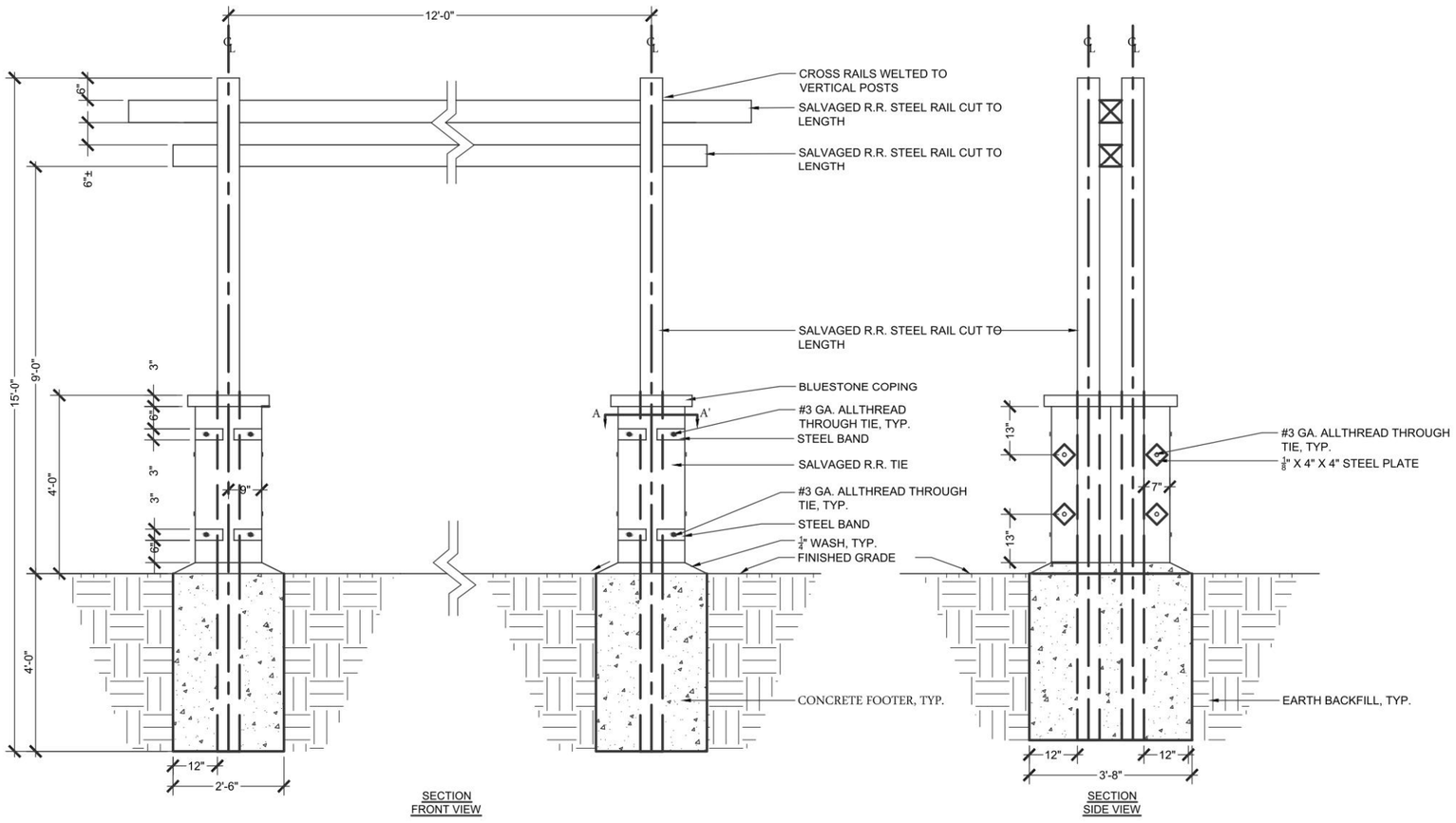
FOR REFERENCE ONLY, NOT TO SCALE



COPING PLAN



SECTION A-A'



SECTION FRONT VIEW

SECTION SIDE VIEW

NOTE:

1. FOOTING DESIGN AND SHOP DRAWINGS SHALL BE REVIEWED AND APPROVED BY A STRUCTURAL ENGINEER.

HOJACK TRAIL FEASIBILITY STUDY
TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

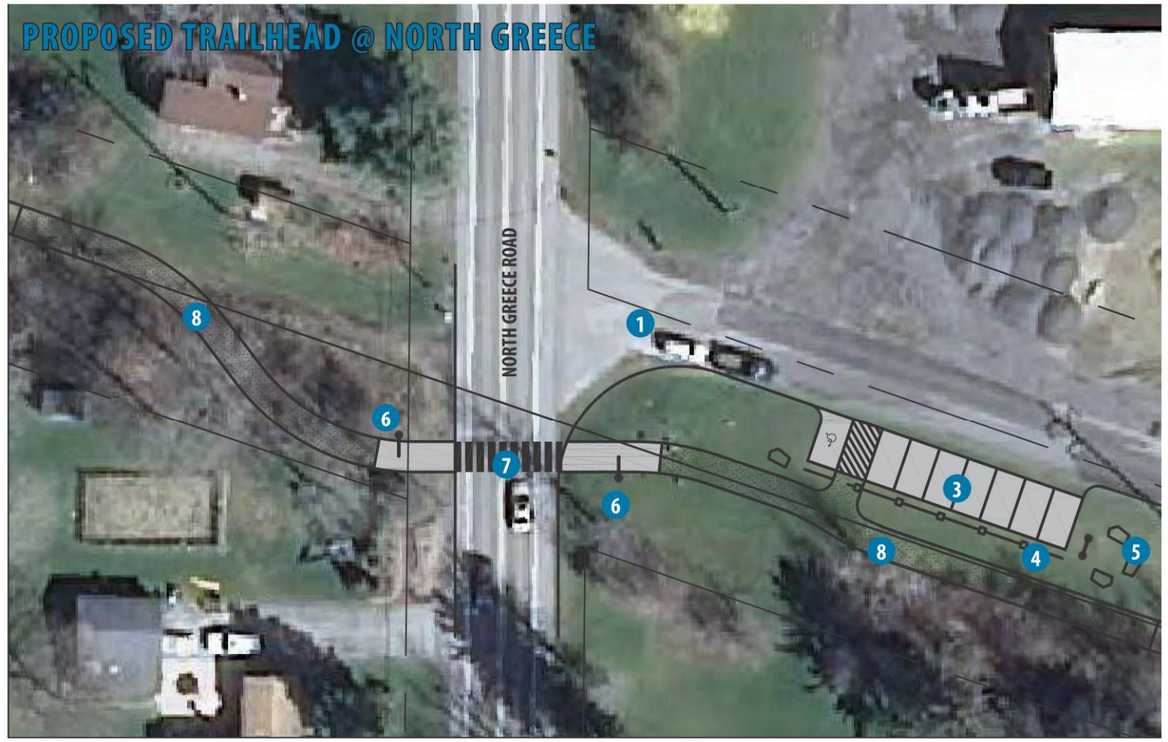
FIGURE 12
GATEWAYS

RECLAIMED RAIL SIGN POSTS (LOCATED AT TRAIL ACCESS POINTS)

FOR REFERENCE ONLY, NOT TO SCALE

Trail gateways and signage displays identify the Hojack Trail as public space and draw attention to at-grade crossings. The design vocabulary highlights the adaptive re-use of an old railroad corridor. Gateways and sign posts are constructed of salvaged railroad ties, steel rails, and tie plates.

Maintenance of gateways and signage within the corridor will be coordinated with RG&E, Town of Greece, Town of Parma and Village of Hilton.



PROPOSED IMPROVEMENTS LEGEND

1. **UTILIZE EXISTING ACCESS ROAD**
   Improvements as necessary.
2. **NEW ACCESS ROAD**
   Improvements as necessary.
3. **NEW PARKING FOR 8 VEHICLES**
   Including 1 ADA accessible space.
4. **TIMBER GUIDERAIL**
   Preventive measure against vehicles accessing trail.
5. **SEATING, SIGNAGE AND GATEWAY OPPORTUNITIES**
6. **TRAIL ACCESS GATE**
   Preventive measure against vehicles accessing trail. To comply with RG&E requirements.
7. **STRIPED ROADWAY CROSSING & SIGNAGE**
   Refer to Road Crossing Standards figure for pavement marking and signage recommendations. To comply with AASHTO and MUTCD standards.
8. **PROPOSED SHARED-USE TRAIL**
   Concept alignment. 10 ft. wide stonedust with asphalt aprons at road crossings. Trail traffic calming recommended near road crossings.

HOJACK TRAIL FEASIBILITY STUDY

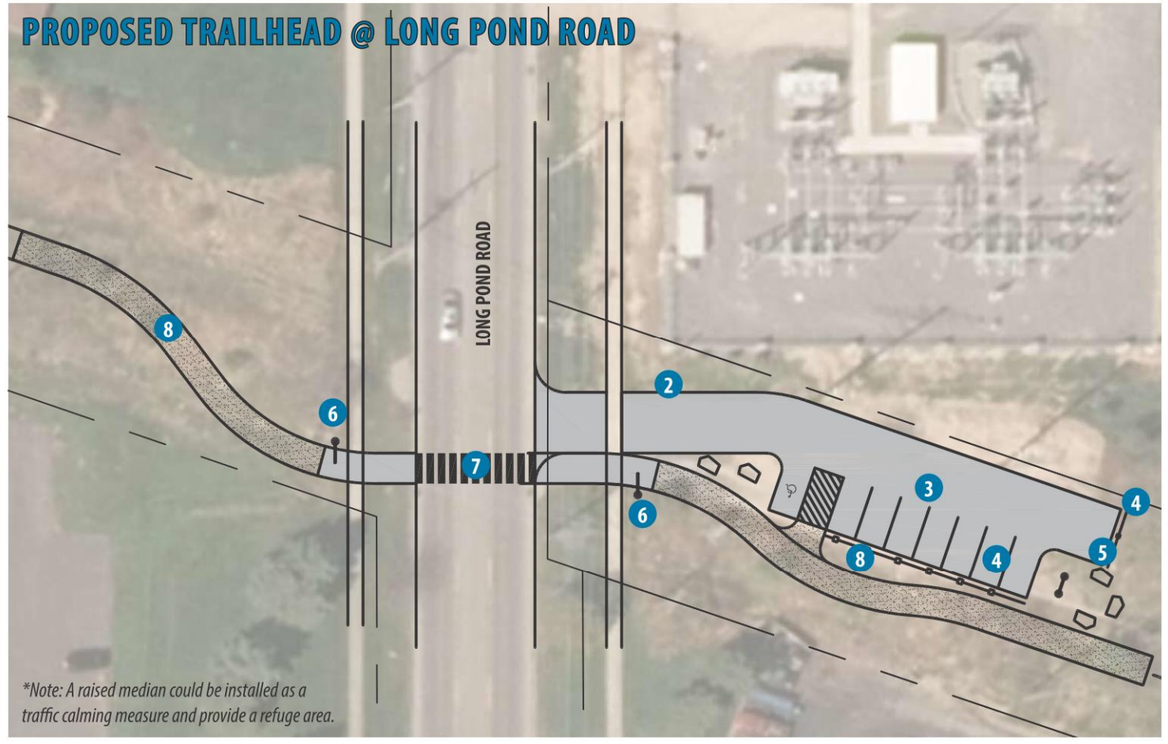
TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

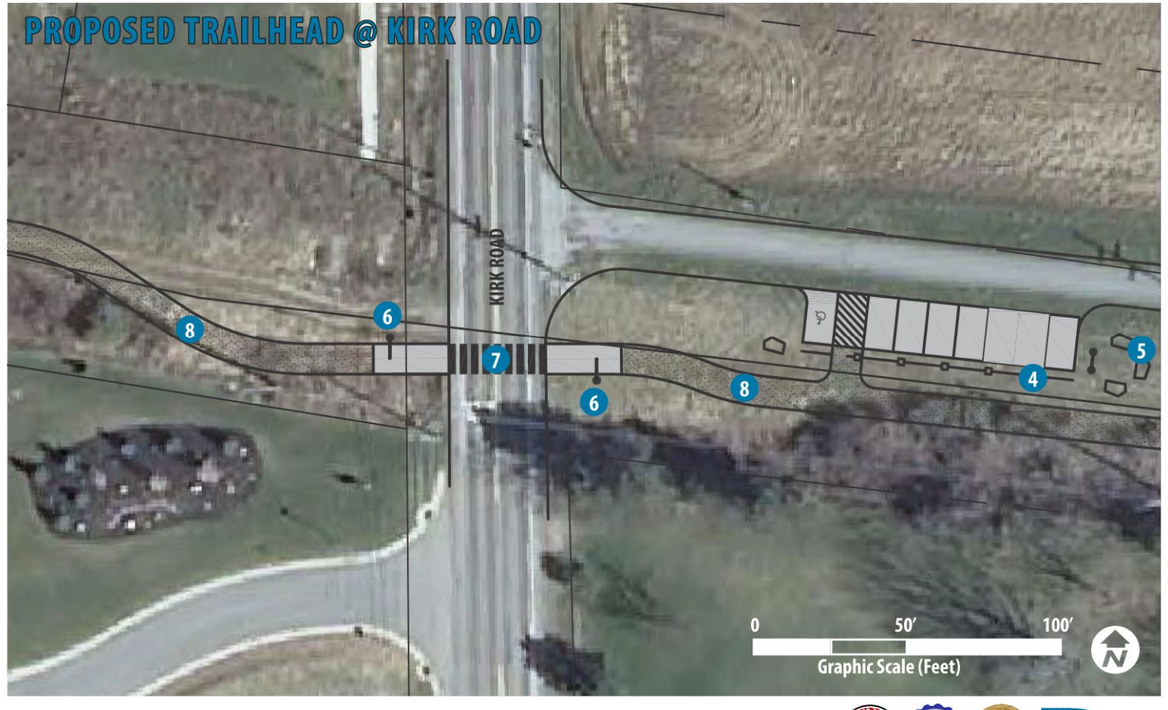
FIGURE 13

PROPOSED TRAILHEADS

NOTE

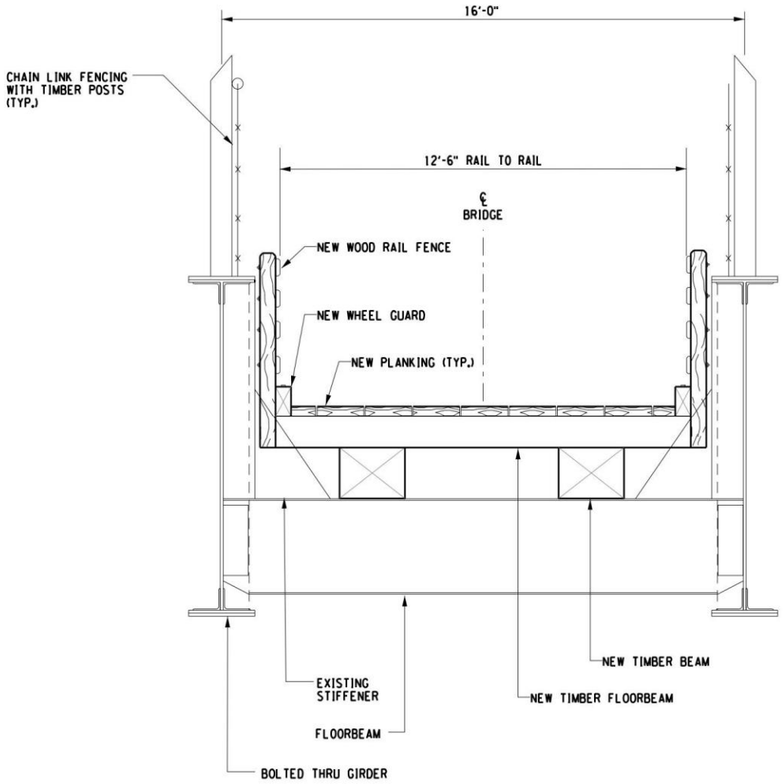
RG&E requires new construction to be a minimum of 25' from all utility poles and structures. Utility location coordination with RG&E, Monroe County, Monroe County Pure Waters, Town of Greece, Town of Parma, and Village of Hilton will be required during future design phases.



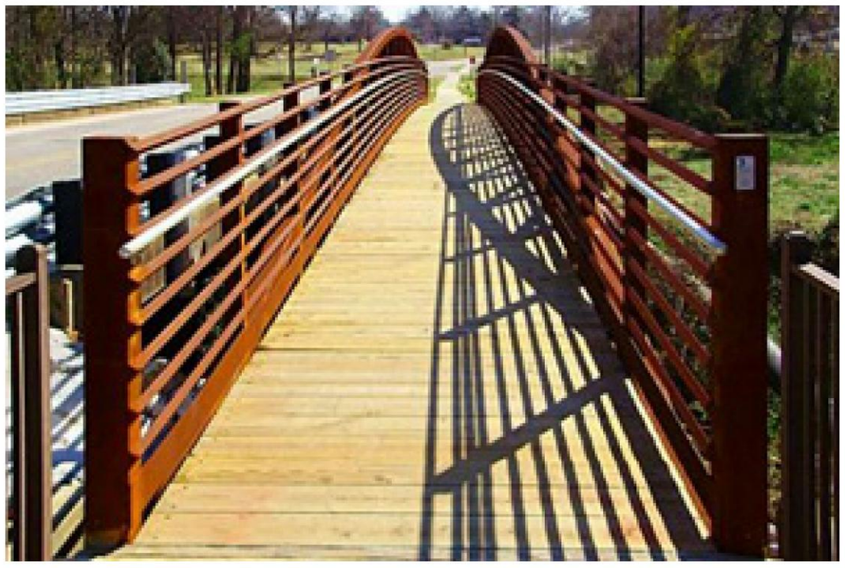


HOJACK TRAIL FEASIBILITY STUDY
TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

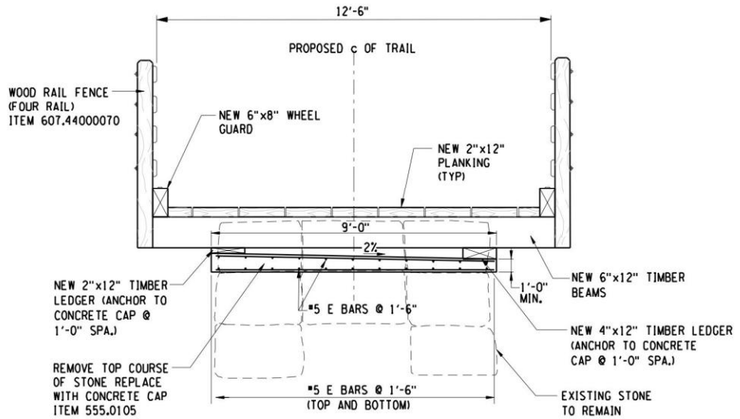
FIGURE 14
RECOMMENDED IMPROVEMENTS BRIDGES



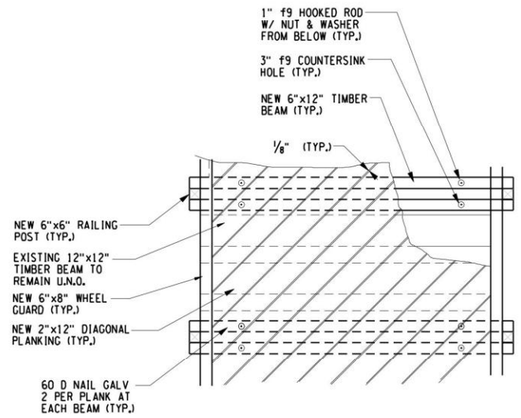
BRIDGE IMPROVEMENTS DETAIL: DECKING & HANDRAIL
FOR REFERENCE ONLY, NOT TO SCALE, NOT FOR CONSTRUCTION



BRIDGE IMPROVEMENTS: POSSIBLE DECKING & HANDRAIL
http://www.bigrbridge.com/en/home/news/bigrpedestrianengineeringexcellence.aspx



BRIDGE IMPROVEMENTS DETAIL: APPROACH, DECKING & HANDRAIL
FOR REFERENCE ONLY, NOT TO SCALE, NOT FOR CONSTRUCTION



BRIDGE IMPROVEMENTS DETAIL: DECKING
FOR REFERENCE ONLY, NOT TO SCALE, NOT FOR CONSTRUCTION

BRIDGE IMPROVEMENTS: POSSIBLE DECKING & HANDRAIL
http://acrow.com/wp-content/uploads/2013/05/acrow-web-bridges-pedestrian-13.jpg

BRIDGE IMPROVEMENTS: POSSIBLE DECKING & HANDRAIL
http://www.westernwoodstructures.com/index.php/timber-bridges/pedestrian-bridges/

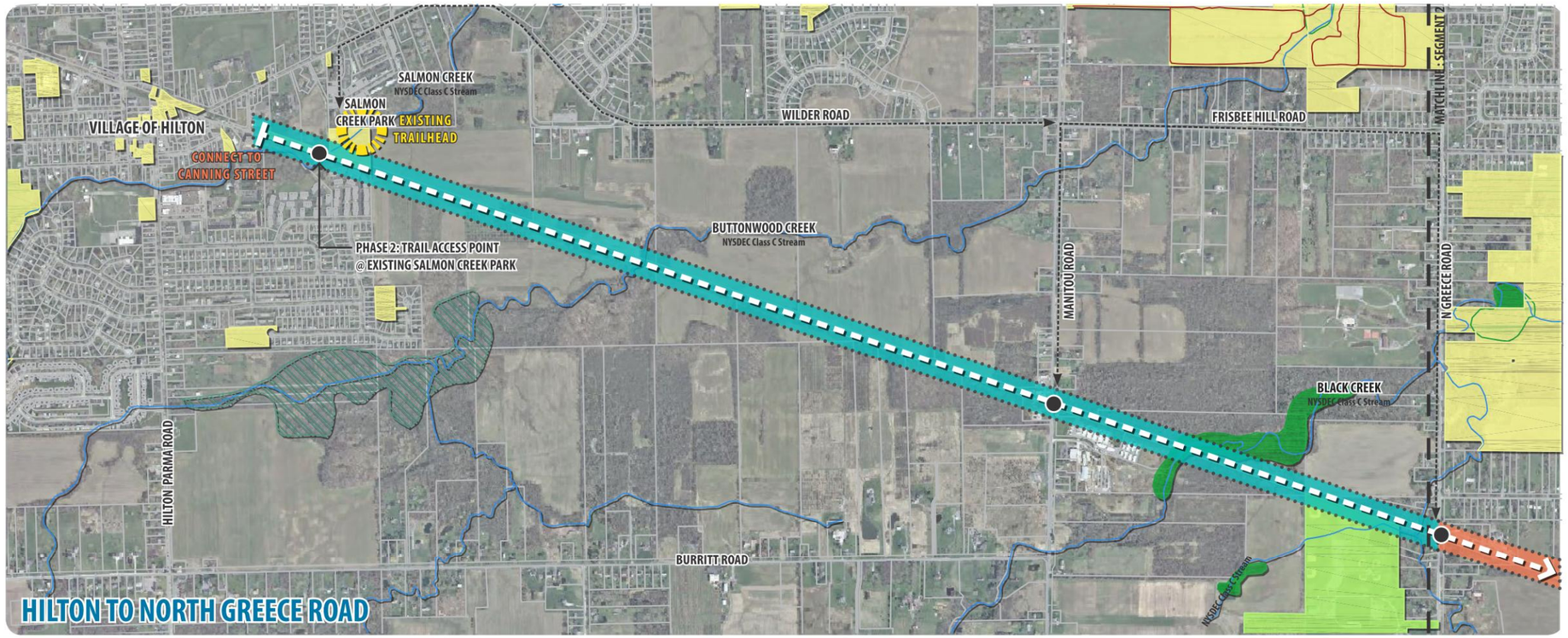
BRIDGE IMPROVEMENTS: POSSIBLE DECKING & HANDRAIL
http://www.johnweeks.com/river_stlouis/pages/stlL16.html

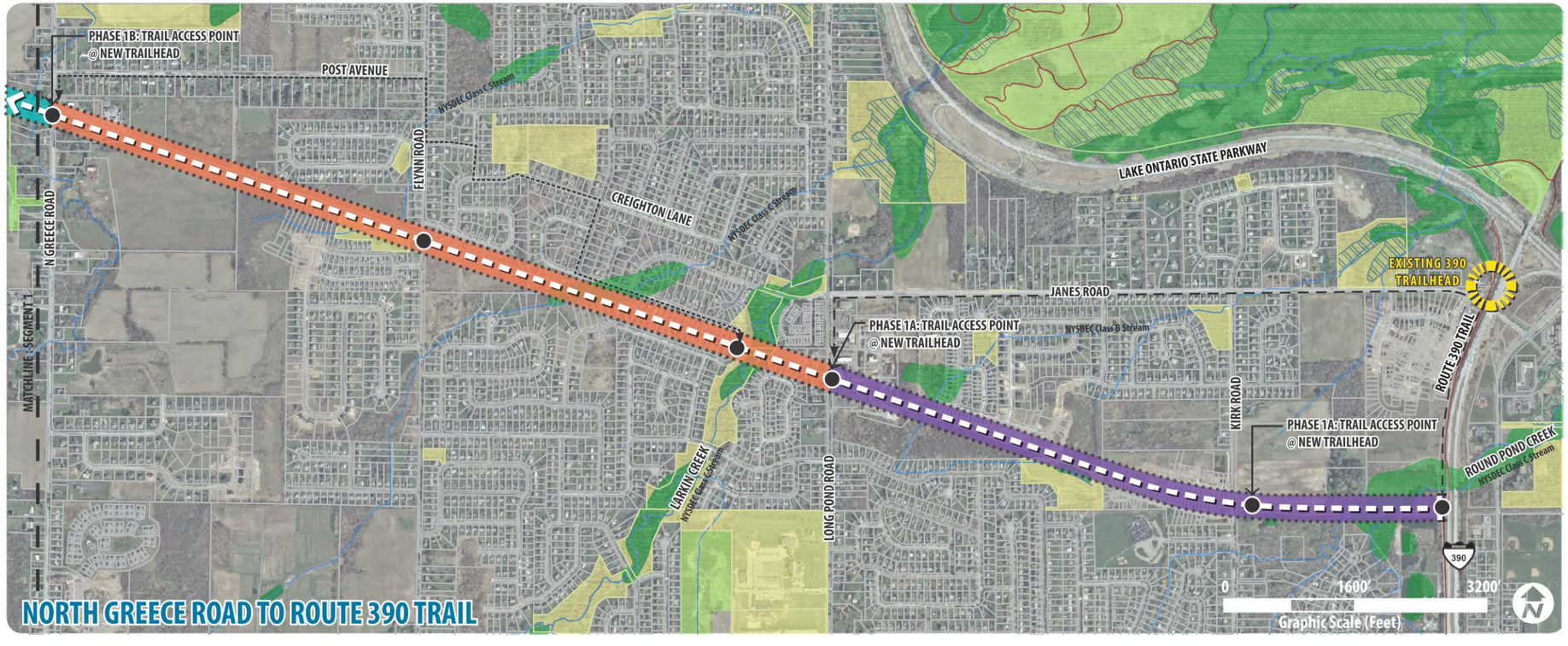
HOJACK TRAIL FEASIBILITY STUDY

TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 15

RECOMMENDED PHASING PLAN





LEGEND

- RECOMMENDED TRAIL ALIGNMENT
- TRAIL CONNECTION LOOPS *(existing sidewalks and trails)*
- TRAIL CONNECTION LOOPS *(on road)*
- TRAIL ACCESS POINTS *(refer to trail improvements figure)*

PHASE 1

The first phase of trail development will be the construction of +/- 4.0 miles of trail in the Town of Greece. The first phase is split into two sub-phases.

Phase 1A: Existing 390 Trail to Long Pond Road

Phase 1A will begin at the already established Route 390 trail and end at Long Pond Road. The terminating point of Phase 1A will provide connections to the existing sidewalk system along Long Pond Road; linking neighborhoods and community destinations to the north and south with the trail.

Phase 1B: Long Pond Road to North Greece Road

Phase 1B will begin at the terminus of Phase 1A, Long Pond Road and will be constructed from Long Pond Road to North Greece Road. The terminating point of Phase 1B will provide on-road connections to the neighborhoods and community destinations to the north and south.

PHASE 2

Phase 2: North Greece Road to Village of Hilton

Phase 2, the final phase of trail development will extend through the Town of Greece and Town of Parma into the Village of Hilton. The Phase 2, +/- 2.5 mile trail will terminate in the Village of Hilton at Canning Street and will provide for future connections west.

Pre-Construction Groundwork

- Formalize access agreements (RG&E board approval and PSC)
- Identify trail management entity
- Establish trail management structure including operation, maintenance and liability
- Secure funding for construction
- Implement phasing according to funding stream, including any required environmental review and permitting

CONCEPTUAL IMPROVEMENTS

1 10' WIDE SHARED USE TRAIL
- Design follows AASHTO and ADA design guidance.
- Stable and maintainable surface: stonedust.
- Open curve and radii provide clear sight lines,prevent blind spots, and prevent user conflicts.
- Follow sustainable trail construction practices to reduce site disturbance and minimize erosion potential.
- 22,000 lb access load required to accommodate RG&E vehicles.

2 OPEN VIEW SEATING AREA
- Resting and seating provided to support various mobility levels and age groups.
- Placed at maximum intervals of 300 yards, typical(5-7 minutes walking time)

3 NATURAL STONE SEATING
- Locally sourced limestone slabs: theft and vandal proof. No maintenance required.

4 EMERGENCY LOCATION MARKER
- Located on remote sections of the trail where there is no easily identifiable landmarks.
- Each sign has a unique code specific to its location.
- Each sign is GPS located and entered into the 911 system with notes on how to access each specific location.

5 HISTORIC AND WAY FINDING SIGNAGE
- Displays trail icon and trail distance.
- Low maintenance and vandal resistant materials and finishes.
- Opportunities to display historic and ecological / environmental information.

6 HABITAT ENHANCEMENT
- Establish native under-story vegetation to prevent erosion, increase biodiversity , and enhance habitat views.

PROJECT LOCATION

HOJACK TRAIL FEASIBILITY STUDY

TOWN OF GREECE, TOWN OF PARMA, VILLAGE OF HILTON
NEW YORK

FIGURE 16

CONCEPTUAL TRAIL RENDERING

EXISTING CONDITIONS

PROPOSED CONDITIONS

Concept rendering, not to scale, not for construction.

9. IMPLEMENTATION

Existing Vegetation, Hojack Corridor

9.1 POTENTIAL FUNDING SOURCES

This section identifies and discusses numerous sources of monetary assistance for bicycle and pedestrian facilities and programs. Some programs are more suitable than others for the Hojack Trail System. This list has not been edited in the interest of providing a wide range of potential funding solutions.

The costs associated with constructing the bicycle and pedestrian facilities recommended in this Plan far exceed available resources. To help alleviate this deficiency, this section identifies and discusses the numerous sources which can be used to provide monetary assistance for bicycle and pedestrian facilities and programs. Many of these funding sources are available on the federal level, as dictated in the new transportation legislation, Fixing America's Surface Transportation Act, or the "FAST" Act. Many of these federal programs are administered by the New York State Department of Transportation (NYSDOT). A number of private funding sources also exist which can be used by local governments to implement bicycle- and pedestrian-related programs.

1. FEDERAL FUNDING SOURCES: FAST FUNDED PROGRAMS

The adoption of the FAST Act generally continues the bicycle and pedestrian funding mechanisms of its legislative predecessor, Moving Ahead for Progress for the 21st Century (MAP-21) with minor modifications and at slightly higher funding levels. The most significant structural change, which does not equate to a significant practical difference, is that the MAP-21 Transportation Alternatives Program (host to many of the Federal non-motorized transportation funding opportunities), is eliminated. Instead, transportation alternatives funding is a set-aside component of the Surface Transportation Block Grant (STBG) program, which is the successor to prior legislations' Surface Transportation Program (STP). Safe routes to school projects and recreational trail projects are among the activities that now fall under this program set-aside. These and other funding opportunities governed by the FAST Act are briefly described in this section. It is worth noting that some FAST Act changes related to transportation alternatives funding apply only to urbanized areas with populations greater than 200,000, and therefore may not be applicable to the Town of Greece as an individual applicant. It is also worth noting that the FAST Act introduces some non-motorized transportation changes, such as language related to Complete Streets concepts, which are not strictly related to funding.

Several of the following resources provide additional information on relevant aspects of the FAST Act:

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/legislation/sec217.cfm

http://www.fhwa.dot.gov/fastact/factsheets/transportationalternativesfs.pdf

http://www.bikeleague.org/content/what-know-about-fast-act

National Highway Performance Program. Funds may be used to construct bicycle transportation facilities and pedestrian walkways on land adjacent to any highway in the National Highway System, including Interstate highways.

Highway Safety Improvement Program. Funds may be used for bicycle- and pedestrian-related highway safety improvement projects on a public road that are consistent with a State strategic highway safety plan. Highway Safety Improvement Program funds bicycle- and pedestrian-related highway safety improvement projects, strategies and activities on a public road as long as the project is consistent with a State strategic highway safety plan.

Congestion Mitigation and Air Quality (CMAQ) Improvement Program. Established in 1991 and continued in the FAST Act, CMAQ provides funding for transportation projects that help State and local governments reduce vehicle emissions and traffic congestion in areas where air quality does not meet or did not previously attain the National Ambient Air Quality Standards. Projects require a 20 percent local match and the minimum grant amount is $250,000. For the 2016 funding round, Monroe County is one of only 19 counties eligible to apply for CMAQ funding. Transportation Alternatives (TAP). This program helps communities deliver safe, transformative and innovative projects of value to the public that contribute to the revitalization of local and regional economies by funding programs and projects defined as transportation alternatives. Projects are expected to improve mobility, accessibility, and the community's transportation character such that the street network is more vibrant, walkable and safer for all transportation mode users, in particular pedestrians, bicyclists, transit users and drivers. Originally established under MAP-21, TAP now includes funding for what previously comprised three separate programs (Transportation Enhancements, Safe Routes to School, and Recreational Trails). Projects require a 20 percent local match and the minimum grant amount is $250,000. Eligible activities include:

- On and off Road bicycle and pedestrian facilities;
- Safety related infrastructure projects for improving non-driver access to public transportation and enhanced mobility
- Conversion and use of abandoned railroad corridors for trails for non-motorized transportation users
- Safe routes to school projects
- Projects for planning, designing or constructing boulevards or other roadways largely in the right of way of former divided highways
- Eligible secondary project activities include community improvement and environmental mitigation
- Construction of turnouts, overlooks and viewing areas;
- Community improvement activities and environmental mitigation are eligible only if they are part of a project that is eligible under one of the above categories

The Recreational Trails Program,funded under the TA umbrella, is administered separately by the NYS Office of Parks, Recreation and Historic Preservation. Funds may be used for all kinds of trail projects. Of the funds apportioned to a state, 30 percent must be used for motorized trail uses, 30 percent for non-motorized trail uses, and 40 percent for diverse trail uses (any combination). Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.

Highway Safety Section 402 Grants. A State is eligible for these Section 402 grants by submitting a Performance Plan (establishing goals and performance measures for improving highway safety) and a Highway Safety Plan (describing activities to achieve those goals). Research, development, demonstrations, and training to improve highway safety (including bicycle and pedestrian safety) are carried out under the Highway Safety Research and Development (Section 403) Program.

Highway Safety Section 405 Grants. Under this new NHTSA program, states in which more than 15% of traffic fatalities are bicyclists and pedestrians (including New York) are eligible for nonmotorized safety funding. Eligible activities include safety education and awareness activities and programs, safety enforcement (including police patrols), and training for law enforcement on pedestrian- and bicycle-related safety laws.

2. OTHER FEDERALLY FUNDED PROGRAMS

Community Development Block Grants (CDBG). Through the U.S. Department of Housing and Urban Development (HUD), the CDBG program provides eligible metropolitan cities and urban counties (called "entitlement communities") with annual direct grants that they can use to revitalize neighborhoods, expand affordable housing and economic opportunities, and/or improve community facilities and services, principally to benefit low- and moderate-income persons. Eligible activities include building public facilities and improvements, such as streets, sidewalks, sewers, water systems, community and senior citizen centers, and recreational facilities. Several communities have used HUD funds to develop greenways. *http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs*

Transportation Investment Generating Economic Recovery (TIGER). The highly competitive TIGER grant program was created in 2009 and has funded numerous multi-modal and multi-jurisdictional projects since its inception. This is an annually administered discretionary grant program distinct from the FAST Act and typically provides grants to projects difficult to fund through traditional federal programs. Awards focus on capital projects that generate economic development and improve access to reliable, safe and affordable transportation for communities, both urban and rural.

Title 49 USC allows the Urbanized Area Formula Grants (Section 5307), Capital Investment Grants and Loans (Section 5309), and Formula Program for Other than Urbanized Area (Section 5311) transit funds to be used for improving bicycle and pedestrian access to transit facilities and vehicles. Eligible activities include investments in "pedestrian and bicycle access to a mass transportation facility" that establishes or enhances coordination between mass transportation and other transportation.

National Park Service Land and Water Conservation Fund (LWCF) Grants. This federal funding source was established in 1965 to provide "close-to-home" parks and recreation opportunities to residents throughout the United States. Money for the fund comes from the sale or lease of nonrenewable resources, primarily federal offshore oil and gas leases, and surplus federal land sales. LWCF grants can be used by communities to build a variety of parks and recreation facilities, including trails and greenways. LWCF funds are distributed by the National Park Service to the states annually. Communities must match LWCF grants with 50 percent of the local project costs through in-kind services or cash. All projects funded by LWCF grants must be used exclusively for recreation purposes, in perpetuity. Projects must be in accordance with each State's Comprehensive Outdoor Recreation Plan.

3. STATE AND REGIONAL FUNDING SOURCES

CHIPS (Consolidated Local, State, and Highway Improvement Program). Funds are administered by NYSDOT for local infrastructure projects. Eligible project activities include bike lanes and wide curb lanes (highway resurfacing category); sidewalks, shared use paths, and bike paths within highway right-of-way (highway reconstruction category), and traffic calming installations (traffic control devices category). CHIPS funds can be used for TAP grant program local match requirements.

New York State's Consolidated Funding Application (CFA) is a streamlined resource through which applicants can access multiple financial assistance programs made available through various state agencies. The CFA offers the opportunity for local governments (and other eligible applicants) to submit a single grant application to state agencies that may have resources available to help finance a given proposal. All submitted CFAs are also reviewed by the applicant's Regional Economic Development Council, which may elect to endorse the proposal as a regional priority project. Several grant resources have been made available that may be appropriate funding opportunities for implementation of active transportation efforts, including the following:

- ***Environmental Protection Fund's (EPF) Municipal Grant Program***
- ***EPF Recreational Trails Program***
- ***Department of State's Local Waterfront Revitalization Program***
- ***Environmental Facilities Corporation's Green Innovation Grant Program.***

The Greater Rochester Health Foundation administers a competitive grant program to implement community health and prevention projects. While grant focus topics and cycles may vary from year to year (the letter of intent deadline for 2016 grants is July 15, 2016), bicycle- and pedestrian-related projects and programs may frequently be well suited for these opportunity grants. *http://www.thegrhf.org/*

4. PRIVATE FUNDING SOURCES

There are a number of for and non-profit businesses that offer programs that can be used to fund bicycle and pedestrian related programs and projects. Nationally, groups like Bikes Belong fund projects ranging from facilities to safety programs. Locally, Wegmans and Excellus have a strong track record of supporting health-based initiatives and may be resources for partnership or sponsorship.

PeopleForBikes. The PeopleForBikes Community Grant Program strives to put more people on bicycles more often by funding important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S. Most of the grants awarded to government agencies are for trail projects. The program encourages government agencies to team with a local bicycle advocacy group for the application. Applications for accepted bi-annually for grants of up to $10,000 each (with potential local matches. *http://www.peopleforbikes.org/pages/community-grants*

American Hiking Society National Trails Fund. The American Hiking Society's National Trails Fund is the only privately funded national grants program dedicated solely to hiking trails. National Trails Fund grants have been used for land acquisition, constituency building campaigns, and traditional trail work projects. Since the late 1990s, the American Hiking Society has granted nearly $200,000 to 42 different organizations across the US. Applications are accepted annually with a summer deadline.
http://www.americanhiking.org/NTF.aspx

The Global ReLeaf Program. The Global ReLeaf Forest Program is American Forests' education and action program that helps individuals, organizations, agencies, and corporations improve the local and global environment by planting and caring for trees. The program provides funding for planting tree seedlings on public lands, including trailsides. Emphasis is placed on diversifying species, regenerating the optimal ecosystem for the site and implementing the best forest management practices. This grant is for planting tree seedlings on public lands, including along trail rights-of-way. *http://www.americanforests.org/global_releaf/grants/*

The Robert Wood Johnson Foundation. The Robert Wood Johnson Foundation seeks to improve the health and health care of all Americans. One of the primary goals of the Foundation is to "promote healthy communities and lifestyles." Specifically, the Foundation has an ongoing "Active Living by Design" grant program that promotes the principles of active living, including non-motorized transportation. Other related calls for grant proposals are issued as developed, and multiple communities nationwide have received grants related to promotion of trails and other non-motorized facilities. *http://www.rwjf.org/grants/*

Conservation Alliance. The Conservation Alliance is a group of outdoor businesses that supports efforts to protect specific wild places for their habitat and recreation values. Before applying for funding, an organization must first be nominated by a member company. Members nominate organizations by completing and submitting a nomination form. Each nominated organization is then sent a request for proposal (RFP) instructing them how to submit a full request. Proposals from organizations that are not first nominated will not be accepted. The Conservation Alliance conducts two funding cycles annually. Grant requests should not exceed $35,000 annually. *http://www.conservationalliance.com/*

Surdna Foundation. The Surdna Foundation seeks to foster just and sustainable communities in the United States, communities guided by principles of social justice and distinguished by healthy environments, strong local economies and thriving cultures. *http://www.surdna.org*

Table 5: Funding Sources

Funding Source	*Category*	*Relevant Project Types*
National Highway Performance Program	Federal	Bicycle transportation facilities and pedestrian walkways adjacent to highways in the National Highway System, including interstates (Section 207)
Highway Safety Improvement Program	Federal	Intersection safety improvement, pavement and shoulder widening; bicycle/pedestrian/disabled person safety improvements; traffic calming; installation of yellow-green signs at pedestrian and bicycle crossings and in school zones; transportation safety planning; road safety audits; improvements consistent with FHWA publication "Highway Design Handbook for Older Drivers and Pedestrians"; safety improvements for publicly owned bicycle and pedestrian pathway or trail

Congestion Management and Air Quality (CMAQ)	Federal	Funding to reduce vehicle emissions and traffic congestion in areas where air quality does not meet National Ambient Air Quality Standards. Eligible projects include bicycle and pedestrian facility improvements; transit improvements; rideshare programs; alternative fueling facilities/clean vehicle deployment
Transportation Alternatives	Federal funding administered by NYS DOT	On and off road bicycle and pedestrian facilities; projects that improve non-driver safety, access to transportation and enhanced mobility; conversion of abandoned railroad corridors into non-motorized trails; projects that enable/ encourage children to walk/bike to school (Safe Routes to School); construction of turnouts, overlooks and viewing areas; planning, designing or constructing boulevards in former divided highway right-of-ways
Recreational Trails Program	Federal funding administered by NYS OPRHP	Develop and maintain trails for both motorized and non-motorized uses, including hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or other off-road motorized vehicles; develop trailhead facilities; purchase/lease of maintenance equipment; acquisition of easements/property
State and Community Highway Safety Grants	Federal	Federal Safety-related programs and projects (Section 402)
HUD Community Development Block Grants	Federal	Public facilities and improvements, such as streets, sidewalks, sewers, water systems, community and senior citizen centers, recreational facilities, and greenways
Urbanized Area Formula Grants, Capital Investment Grants and Loans, and Formula Program for Other than Urbanized Area	Federal (FTA)	Bicycle access to public transportation facilities, shelters and parking facilities, bus bicycle racks
CHIPS (Consolidated Local, State, and Highway Improvement Program) (*www.dot.ny.gov/programs/chips*)	State	Bike lanes and wide curb lanes; sidewalks
The Community Development Block Grant (CDBG)	Regional	Sidewalks

The Green Innovation Grant Program GIGP (*http://www.efc.ny.gov/*)	State	Projects that improve water quality and demonstrate green stormwater infrastructure in New York State.
The Greater Rochester Health Foundation	Regional	Community health and prevention projects and programs
Bikes Belong Coalition (*www.bikesbelong.org/grants*)	Private	Bicycle facilities; end-of-trip facilities; trails; advocacy projects such as Ciclovias
National Trails Fund (*www.americanhiking.org/our-work/national-trails-fund*)	Private	Hiking trails
Global ReLeaf Program (www.americanforests.org/our-programs/global-releaf-projects/global-releaf-grant-application/global-releaf-project-criteria)	Private	Trail tree plantings
Robert Wood Johnson Foundation (general) (*www.rwjf.org/grants*)	Private	Various
The Conservation Alliance Fund (*www.conservationalliance.com/grants/grant_criteria*)	Private	Land Use
Surdna Environment/ Community Revitalization (*www.surdna.org/grants/grants-overview.html*)	Private	Community revitalization and environment, including greenway trail design

9.2 TRAIL CONSTRUCTION STANDARDS

(Derived from AASHTO "Development of Bicycle Facilities")
Class I bikeways (bike paths) are facilities with exclusive right of way, with cross flows by motorists minimized. Class I bikeways are typically described as serving "the exclusive use of bicycles and pedestrians." However, experience has shown that if significant pedestrian use is anticipated, separate facilities for pedestrians are one way to minimize conflicts. Motorized bicycles are prohibited on bike paths unless authorized by ordinance or approval of the agency having jurisdiction over the path. Likewise, all motor vehicles are prohibited from bike paths. Signing can strengthen these prohibitions. Design will need to comply with RG&E engineer guidelines.

1. WIDTHS

Under most conditions, a recommended paved width for a two-way shared use path is 10'. In sensitive ecological areas, however, an 8' trail width is allowed where sight distance and trail alignment are good, expected trail use is low, and access by the occasional trail maintenance vehicle will not cause trail surface damage. Where heavy bicycle volumes are anticipated and/or significant pedestrian traffic is expected, the pavement width of a two-way path should be greater than 10', preferably 12' or more. Another important factor in determining the appropriate trail width is that bicyclists will tend to ride side by side on bike paths, necessitating more width for safe use. A minimum 2' graded area with a maximum 1:6 slope shall be provided adjacent to both sides of the path. A 3' graded area is recommended to provide clearance from poles, trees, walls, fences, guardrails, or other lateral obstructions. Where the paved width is wider than the minimum required, the graded area may be reduced accordingly. However, the graded area is a desirable feature regardless of the pavement width. The proposed Hojack Trail preferred width is 10' and the existing conditions within the RG&E corridor are able to accommodate the proposed multi-use trail.

2. CLEARANCE TO OBSTRUCTIONS

A minimum 8' horizontal clearance to obstructions shall be provided adjacent to the pavement or stone dust. A 10' clearance is recommended. Where the pavement width is wider than the minimum required, the clearance may be reduced accordingly; however, an adequate clearance is desirable regardless of the paved width. If a wide path has pavement that is contiguous with a continuous fixed object (i.e. a block wall), a 4" white edge stripe, 12" from the fixed object, is recommended to minimize the likelihood of a bicyclist hitting it. On structures, the clear width between railings shall the same as the approaching paved path plus the minimum 2' clear areas. The vertical clearance to obstructions across a bridge or structure shall be 10'.

3. INTERSECTIONS WITH HIGHWAYS

Intersections are a prime consideration in bike path design. If alternate locations for a bike path are available, the one with the most favorable intersection conditions should be selected. Where motor vehicle cross traffic and bicycle traffic is heavy, grade separations are desirable to eliminate intersection conflicts. Where grade separations are not feasible, assignment of right of way by traffic signals should be considered. Where traffic is not heavy, stop or yield signs for bicyclists may suffice. Bicycle path intersections and approaches should be on relatively flat grades. Stopping sight distances at intersections should be checked and adequate warning should be given to permit bicyclists to stop before reaching the intersection, especially on downgrades. When crossing an arterial street, the crossing should either occur at the pedestrian crossing, where motorists can be expected to stop, or at a location completely out of the influence of any intersection to permit adequate opportunity for bicyclists to see turning vehicles. When crossing at midblock locations, right of way should be assigned by devices such as yield signs, stop signs, or traffic signals that can be activated by bicyclists. Even when crossing within or adjacent to the pedestrian crossing, stop or yield signs for bicyclists should be placed to minimize potential for conflict resulting from turning autos. Where bike path stop or yield signs are visible to approaching motor vehicle traffic, they should be shielded to avoid confusion. In some cases, "Trail X-ing" signs may be placed in advance of

the crossing to alert motorists. Ramps should be installed in the curbs, to preserve the utility of the bike path. Ramps should be the same width as the bicycle paths. Curb cuts and ramps should provide a smooth transition between the bicycle path and the roadway.

4. DESIGN SPEED

The proper design speed for a trail is dependent on the expected type of use and on the terrain. The minimum design speed for a shared use path should be 20 mph. On unpaved paths, a lower design speed of 15 mph can be used. Similarly, where the grades or prevailing winds dictate, a higher design speed of 25 mph can be used. Installation of "speed bumps" or other similar surface obstructions, intended to cause bicyclists to slow down in advance of intersections or other geometric constraints, shall not be used. These devices cannot compensate for improper design.

5. HORIZONTAL ALIGNMENT AND SUPER-ELEVATION

The minimum radius of curvature negotiable by a bicycle is a function of the super-elevation rate of the pathway surface, the coefficient of friction between the bicycle tires and the surface, and the speed of the bicycle. For most bicycle path applications, the maximum super-elevation rate will be 3%. A straight 2% cross slope is recommended on tangent sections, and ADA guidelines require that cross slopes not exceed 2-3 percent. The minimum super-elevation rate of 2% will be adequate for most conditions and will simplify construction. When transitioning a 3% super-elevation, a minimum 25-foot transition distance should be provided between the end and beginning of consecutive and reversing horizontal curves. Additionally, a crowned slope may be desired in some locations to work best with the existing conditions and grades, as shown on Page 70.

6. STOPPING SIGHT DISTANCE

To provide bicyclists with an opportunity to see and react to the unexpected, a bicycle path should be designed with adequate stopping sight distances. The distance required to bring a bicycle to a full controlled stop is a function of the bicyclist's perception and brake reaction time, the initial speed of the bicycle, the coefficient of friction between the tires and the pavement, and the braking ability of the bicycle. Stopping site distances at intersections should be checked and adequate warning should be given.

7. LATERAL CLEARANCE ON HORIZONTAL CURVES

Bicyclists frequently ride abreast of each other on bicycle paths, and on narrow bicycle paths, bicyclists have a tendency to ride near the middle of the path. For these reasons, and because of the serious consequences of a head-on bicycle accident, lateral clearances on horizontal curves should be calculated based on the sum of the stopping sight distances for bicyclists traveling in opposite directions around a curve. Where this is not possible or feasible, consideration should be given to widening the path through the curve, installing a yellow center stripe, installing a curve ahead warning sign, or some combination of these alternatives.

8. GRADES

Bike paths generally attract less skilled bicyclists, so it is important to avoid steep grades in their design. Bicyclists not physically conditioned will be unable to negotiate long, steep uphill grades. Since novice bicyclists often ride poorly maintained bicycles, long downgrades can cause problems. For these reasons, bike paths with long, steep grades will generally receive very little use. The maximum grade recommended for bike paths is 5%. It is desirable that sustained grades be limited to 2% if a wide range of riders is to be accommodated. Steeper grades can be tolerated for short segments (i.e. up to about 500 feet). Where steeper grades are necessitated, the design speed should be increased and additional width should be provided for maneuverability.

9. STRUCTURAL SECTION

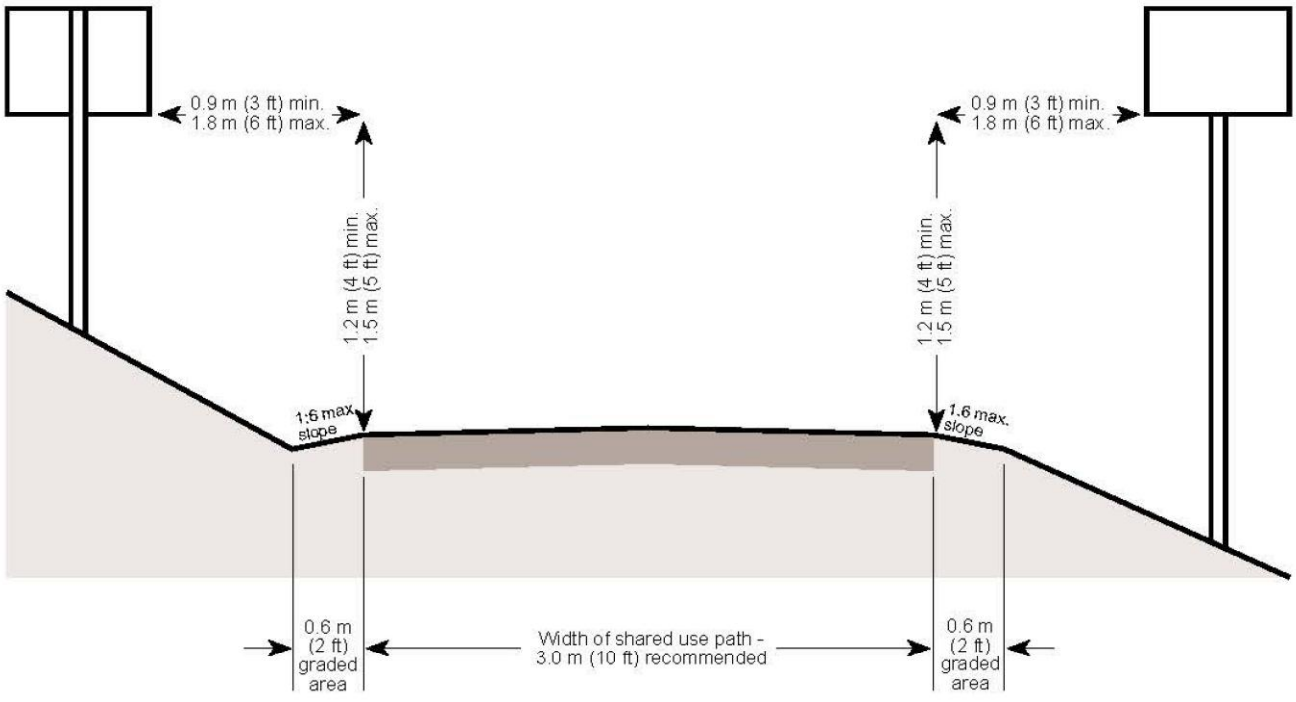
The structural section of a bike path should be designed in the same manner as a highway, with consideration given to the quality of the base soil and the anticipated loads the bikeway will experience. It is important to construct and maintain a smooth riding surface with skid resistant qualities. Principal loads will normally be from RG&E maintenance vehicles as well as trail maintenance and emergency vehicles. Expansive soil should be given special consideration and will probably require a special structural section.

10. DRAINAGE

For proper drainage, the surface of a bike path should have a cross slope of 2%. Sloping in one direction usually simplifies longitudinal drainage design and surface construction, and accordingly is the preferred practice. Ordinarily, surface drainage from the path will be adequately dissipated as it flows down the gently sloping shoulder. However, when a bike path is constructed on the side of a hill, a drainage ditch of suitable dimensions may be necessary on the uphill side to intercept the hillside drainage. Where necessary, catch basins with drains should be provided to carry intercepted water across the path. Such ditches should be designed in such a way that no undue obstacle is presented to bicyclists. Culverts or bridges are necessary where a bike path crosses a drainage channel.

11. LIGHTING

Fixed source lighting reduces conflicts along paths and at intersections. In addition, lighting allows the bicyclist to see the bicycle path direction, surface conditions, and obstacles. Lighting for bicycle paths is important and should be considered where riding at night is expected, such as bicycle paths serving college students or commuters, and at highway intersections. Lighting should also be considered through underpasses or tunnels, and where nighttime security could be a problem. Depending on the location, horizontal illumination levels of 5 lux to 22 lux should be maintained. Light poles should meet the recommended horizontal and vertical clearances. Luminaries and poles should be at a scale appropriate for a pedestrian or bicycle path.



Cross Section of Two-Way Shared Use Path on Separated Right-of-Way - AASHTO Development of Bicycle Facilities

9.3 USER GUIDELINES

Existing Conditions, Hojack Corridor

Non-motorized trails are very popular, which results in congestion and potentially hazardous situations. Regardless of whether you are bicycling, walking, jogging or skiing, if you follow the same rules as everyone else, your trip will be safer and more enjoyable. Help make the multi-use trails safe for everyone by using the following guidelines:

BE COURTEOUS. All trail users, including bicyclists, joggers, walkers, wheelchairs, and skiers, should be respectful of other users regardless of their mode, speed, or level of skill.

BE PREDICTABLE. Travel in a consistent and predictable manner. Always look behind you before changing positions on the trail.

DON'T BLOCK THE TRAIL. When traveling in a group with other trail users or your pets, use no more than half the trail so as not to block the flow of other users.

KEEP RIGHT. Stay as near to the right side of the trail as is safe, except when passing another user.

PASS ON THE LEFT. Pass others, going your direction, on their left. Yield to slower and on-coming traffic. Use hand signals to alert those behind you of your moves. Look ahead and back to make sure the lane is clear before you pull out and pass. Pass with ample separation and do not move back to the right until safely past. Remember: children and pets can be unpredictable.

STOPPING. When stopping, move off of the trail. Beware of others approaching you from behind and make sure they know you are pulling over.

GIVE AUDIBLE WARNING BEFORE PASSING. Give a clear signal by using voice, bell or horn before passing. Give the person you are passing time to respond. Watch for their reaction. So that you can hear signals, don't wear headphones on the trail.

OBEY ALL TRAFFIC SIGNS AND SIGNALS. Use extra caution where trails cross streets. Stop at all signs and intersections and be cautious when crossing driveways. When entering or crossing a trail, yield to traffic on the trail.

USE LIGHTS AT NIGHT. Be equipped with lights when using a trail at any time from dusk to dawn. Bicyclists should have a white light visible from five hundred feet to the front and a red or amber light visible from five hundred feet to the rear. Other trail users should have white lights visible from two hundred fifty feet to the front, and a red or amber light visible from two hundred fifty feet to the rear.

DON'T USE A TRAIL UNDER THE INFLUENCE OF ALCOHOL OR DRUGS. No alcohol or drugs are allowed on RG&E property. Don't overestimate the safety of any trail. You may need all of your reflexes quickly, so it is important that they are not impaired.

BE RESPECTFUL OF PRIVATE PROPERTY. Trails are open to the public, but often the land on the side of the trail is private property. Please respect all property rights.

CLEAN UP LITTER. Do not leave glass, paper, cans, plastic, or any other debris on or near a trail. If you drop something, please remove it immediately.

RECOGNIZE WHEN YOU HAVE OUTGROWN TRAILS. Trails have engineering and design limits. If your speed or style endangers other users, check for alternative routes better suited to your needs. Selecting the right location is safer and more enjoyable for all concerned.

NO HUNTING WITHIN TRAIL CORRIDOR. No hunting on RG&E property is allowed.

9.4 OPERATIONS AND MAINTENANCE

Guidelines for the operation and maintenance of the Hojack Trail will help establish this pathway as a multi-use trail destination that can be managed and maintained safely and efficiently over the long term.

OPERATIONS

The operation of a trail consists of the day-to-day management of trail use. This includes law enforcement, marketing, special events, map and brochure updates, and other functional considerations. The policies regarding the operation of a trail will most likely be decided prior to construction. After construction, a large part of trail operation consists of the execution of those policies.

MAINTENANCE

The maintenance of a trail includes the various activities involved in keeping the trail in a safe, usable condition. This includes efforts ranging from mowing and brush removal to replacement of damaged signs or benches to reconstruction of the trail. Lifetime trail maintenance will place ongoing costs on the operating agency, and this should be considered during the trail planning and funding process. In most cases, funding granted for trail construction cannot be applied to ongoing operations and maintenance. In order to maintain the quality of a newly constructed trail, local trail operators (Town of Greece, Town of Parma, Village of Hilton) must plan for the continued maintenance of the facility.

OPERATIONS & MAINTENANCE RECOMMENDATIONS

These recommendations are designed to assist trail operators in the operation and maintenance of trail facilities, and should be viewed as guidelines. As guidelines, they have no legal requirement, and should be altered based on conditions specific to a particular operating entity or trail.

Establish an Operations and Maintenance Policy. Before the trail opens, the implementing group should set forth a policy document outlining specific rules pertaining to the trail and specific tasks that will be performed for its operation and maintenance. This policy will be the guide for ongoing administration of the trail. The document should be unique to the particular community or trail to which it applies. The Operations and Maintenance Policy may cover a wide range of issues. The following items should be major considerations in the policy.

- Permitted uses on the trail.
- Marketing of the trail. Some communities may desire to reap the economic benefits of trails by actively marketing their facilities. The costs associated with marketing can vary greatly, depending on the intended audience and the intensity of the campaign.
- Policing and security on the trail. This may include the creation of an emergency response plan; provision for trail patrols through existing law enforcement or with special community bike patrols; or a plan for other safety measures such as emergency phones or call boxes.
- Liability. In many cases, existing laws will determine liability. The operating agency should fully understand the liability associated with the trail and verify that insurance is adequate. The trail operator will be responsible for providing a certificate of insurance to the land owner, in this case RG&E, for use of the corridor as a trail.
- Encroachment. Some local agencies may take ownership of a corridor that is being encroached upon by adjacent landowners. This is particularly true of railroad corridors bounded by agricultural uses. The implementing agency should set forth definitive policies relating to existing and future encroachments.
- Snow removal. In mild winters, some users will expect hard-surfaced trails to be plowed for use throughout the season. The operating agency should determine whether or not it will perform this maintenance.
- Seasonal maintenance. The operating agency should determine who will perform this maintenance. In many cases, volunteers or existing clubs can groom trails.
- Cooperative maintenance agreements. In some cases, trail owners may wish to explore the possibility of partnering with other government entities or private organizations in the operation and maintenance of a trail. Any operations or maintenance agreements should be articulated in the operations and maintenance policy.
- Use of volunteers. Volunteers can be a cost-saving benefit for trail operators. They do, however, need to be supervised, and liability prevents their use in certain situations.
- Evaluation of trail conditions. Every trail should be evaluated on a regular schedule to identify the need for major and minor repairs. The operations and maintenance policy should delineate how often trail evaluations take place, preferably once a year.
- Short- and long-term maintenance program. See “Recommended Maintenance”

RECOMMENDED MAINTENANCE

Different types of trails will differ greatly in their maintenance requirements. All trails however, will require a variety of maintenance activities at different points in their lives. **Table 6** outlines some general guidelines for maintenance activities and the frequency at which they should be performed.

- "Frequency" refers to how often each maintenance item should be performed.
- "Maintenance" refers to the specific maintenance activity to be performed.
- "Performed by" refers to who may undertake the particular maintenance activity.

Table 6: Maintenance

FREQUENCY	*MAINTENANCE*	*PERFORMED BY*
As needed	Tree/brush clearing and mowing Sign replacement, Map/signage updates Trash removal/litter clean-up Replace/repair trail support amenities (parking lots, benches, restrooms, etc.) Repair flood damage: silt clean-up, culvert clean-up, etc. Patching/minor regrading/stone dust replacement	Volunteers, trail operator
Seasonal	Planting/pruning/beautification Culvert Cleanup Installation/removal of seasonal signage	Volunteers, trail operator
Yearly	Surface evaluation to determine need for patching or regrading Evaluate support services to determine need for repair or replacement	Trail operator
5-year	Repaint or repair trash receptacles, benches, signs, and other trail amenities, if necessary	Trail operator
10-year	Resurface/regrade	Hired contractor, trail operator, volunteers
20+ years	Replace/reconstruct trail	Hired contractor, trail operator, volunteers

MAINTENANCE COSTS

Maintenance costs will vary greatly depending on the type of trail, amount of volunteer labor, construction quality, and available services. These costs, however, must be considered during the trail planning process to ensure that trail owners can pay for the ongoing maintenance of the trails they develop. Maintenance costs are rarely broken down into specific tasks such as those listed in **Table 6.** Most trails are maintained by an existing agency such as a local or state park, public works, or maintenance department.

Estimated costs are broken down by the type of maintenance performed. There are three basic types of maintenance. Routine maintenance includes all the general activities, such as brush clearing, trash collection, and sweeping, that may take place on a regular basis throughout a season. Minor repairs refer to activities that can be expected every five years or so, such as amenity replacement, repainting, or re-striping. Major reconstruction refers to significant expenditures involving resurfacing or reconstruction. These are the most costly trail maintenance activities and should be planned for in advance. Additionally, all work done to the trail from construction through maintenance should follow OSHA regulations and guidelines.

Routine Maintenance.

Typically, most of the routine maintenance of a trail facility will be performed by an existing agency or volunteer group. Local trail owners should be well equipped to incorporate trail maintenance into their parks or public works maintenance budgets and activities. Routine maintenance activities include:

- All maintenance or improvements to be reviewed and approved by RG&E per their specifications.
- Yearly facility evaluation to determine the need for minor repairs
- Tree and brush clearing
- Mowing
- Map/signage updates
- Trash removal and litter clean-up
- Repair of flood damage: silt clean-up, culvert clean-out, etc.
- Patching, minor regrading, or stone dust replacement
- Planting, pruning, and general beautification
- Sign maintenance

The yearly cost for routine maintenance depends on the maintenance capabilities already in place with the trail owner and the amount of volunteer labor used. According to the Rails-to-Trails Conservancy, the estimated maintenance cost for a stone dust trail is $1,006 per mile (Rails-to-Trails Conservancy, 2014). This figure does not include snow removal.

Minor Repairs.

The need for minor repairs should be determined by a yearly facility evaluation (see Routine Maintenance, above). Minor repairs may include the following activities:

- Replacement, repair, or repainting of trail support amenities, such as signage, benches, trash receptacles
- Replacement of a portion of the trail

The cost for replacement, repair, or repainting of trail amenities is based on the initial cost of those amenities. Trail operators should maintain records of the general costs of trail amenities as a means of estimating future repair and replacement costs. If custom elements, such as lighting or benches are used in trail design, the trail owner should consider ordering extra elements at the time of construction and storing them for future use, thereby defraying the cost of single-runs later.

Major Reconstruction.

There is one activity considered to be major reconstruction, the complete replacement, regrading, and resurfacing of all trails. Complete replacement of a trail involves removing the existing trail, regrading the trail base, and resurfacing the facility. This kind of comprehensive maintenance may be necessary every 20 years, regardless of trail type. Even natural surface trails may need to be fully regraded after 20 years of use. Trail costs for reconstruction are the same as the cost of a new trail plus the cost of demolishing the existing trail. As with any major trail project, however, a detailed cost estimate should be performed during the project planning stages. The best guide for estimating the replacement cost of a trail is to consider the original construction cost.

A major cost such as trail replacement should be considered well in advance. It may be more difficult to secure large state or federal grants for trail reconstruction. Therefore, a trail owner should consider the eventual cost of trail replacement and financially prepare for that significant maintenance activity.

Existing Conditions, Hojack Corridor

9.5 FACTORS NOT ADDRESSED IN THE STUDY

In the course of preparing the Hojack Trail Feasibility Study, there were a few issues that were not addressed or resolved. These issues should be considered as the proposed improvements move into the next phase of development. The following issues need to be considered:

1. Environmental permitting is roughly outlined in this report, and will be a critical undertaking in the next phase of trail development. An archaeological investigation may be necessary, but was not part of this study.

2. To get the trail constructed, the following steps will be necessary:

a. RG&E board approval

b. RG&E Public Service Commission (PSC) filing

a. Secure funding for design and construction

b. SEQRA and permitting

c. Environmental testing as required along the railroad corridor

d. Design development

e. Construction documents

f. Bidding

g. Construction

h. Acceptance by client

i. Management and maintenance plan

j. Programming and community involvement

k. Identify possible community partners, such as the Genesee Land Trust

l. Agreement for shared maintenance requirements between project partners

Existing Vegetation, Hojack Corridor

GREECE · PARMA · HILTON

HOJACK TRAIL FEASIBILITY STUDY

APPENDIX A
Public Input Summary

COMPILATION OF PUBLIC INPUT

Comments Received at Public Open House #1, held September 22, 2015

GENERAL COMMENTS

- Property value of homes on trail. Up? Down? Tax increase?
- Cost? How much will the Town/Village need? Need a rough idea for when the public asks.
- Good project.
- Information for study on Town website.
- What would be allowed – dogs? Picking up?
- Great idea!
- Great idea – the more trails the better!

TRAIL CORRIDOR COMMENTS

- Mile markers?
- Bird Sanctuary? Impacts?
- Cross country skiing
- Dog walking
- Need good junction with existing 390 trail.
- Ash trees along trail?
- Invasive species?

BRIDGE & CULVERT COMMENTS

- Long-term responsibility for bridges and structures?

ROAD CROSSING COMMENTS

- Flashing light at road crossings (i.e. Long Pond)

SAFETY & PRIVACY CONCERNS

- What will be done to separate trail from private property? Privacy concerns.
- Fences for neighbors. Fence to screen neighbor's yards.
- Snow mobiles and ATVs are a big concern.
- Noise: Dirt bikes, etc.
- No motorized vehicles.
- Emergency response?
- Concern over motorized vehicles.
- People cutting through yards to get to trail.
- Mischief and noise.
- Liability – insurance?



Photos from Public Open House #1, held September 22, 2015

COMPILATION OF PUBLIC INPUT

Comments Received at Public Open House #2, held March 3, 2016



Photos from Public Open House #2, held March 3, 2016

COMMENTS ?

I am thrilled!
let's get out of the malls
and into nature !! A.C.

↓
IN TERMS OF
MOUNTAIN BIKES – BETTER
TRAIL

TOWN OF GREECE
HOJACK TRAIL FEASIBILITY STUDY

COMMENTS

Please share any additional comments or feedback you have related to the Hojack Trail Feasibillty Study.

Would hunting be restricted near trails?
Who will maintain trail (trash etc)?
How will 4 wheelers, horses, etc be restricted?

Mike Christel Ingham 585/392-7503

Additional comments may be sent to:

Scott Copey, Town Planner
scopey@greeceny.gov

TOWN OF GREECE
HOJACK TRAIL FEASIBILITY STUDY

COMMENTS

Please share any additional comments or feedback you have related to the Hojack Trail Feasibility Study.

I am so thrilled about this possibility! The town needs a place for people to get away from traffic and enjoy nature. I have "unofficially" been using these trails for years and they pass through woods, farmland and wonderful wildlife habitat. Beautiful. And also historical.
One request: PLEASE do not exclude horseback riders from using the trails. There are not many of us.

Thank you Audrey Cooper

If you need volunteers:
my email is lulufan@rochester.rr.com

Additional comments may be sent to:

Scott Copey, Town Planner
scopey@greeceny.gov

TOWN OF GREECE
HOJACK TRAIL FEASIBILITY STUDY

COMMENTS

Please share any additional comments or feedback you have related to the Hojack Trail Feasibility Study.

I ride road bikes. Would LOVE trail, but only if asphalt. Bike too good to mess up with stone dust!

Additional comments may be sent to:

Scott Copey, Town Planner
scopey@greeceny.gov

TOWN OF GREECE
HOJACK TRAIL FEASIBILITY STUDY

COMMENTS

Please share any additional comments or feedback you have related to the Hojack Trail Feasibility Study.

- Glad to see flashing light now proposed for Long Pond crossing — concern for youth using trail from East to get to library and such
* - Asked last time about linking past 390 Trail to Island Cottage for students to get to Arcadia Middle and Arcadia High
- wondering about fencing along footpaths that access the trail — our house borders and easement for the trail and we're concerned about an open backyard that backs onto the trail

Additional comments may be sent to:

Scott Copey, Town Planner
scopey@greeceny.gov

TOWN OF GREECE
HOJACK TRAIL FEASIBILITY STUDY

COMMENTS

Please share any additional comments or feedback you have related to the Hojack Trail Feasibility Study.

Well thought out plan. Great Idea! Can't wait for it to be completed!

Additional comments may be sent to:

Scott Copey, Town Planner
scopey@greeceny.gov

TOWN OF GREECE
HOJACK TRAIL FEASIBILITY STUDY

COMMENTS

Please share any additional comments or feedback you have related to the Hojack Trail Feasibility Study.

AS A PROPERTY OWNER WITH LAND ADJACENT TO THE PROPOSED TRAIL I AM CONCERNED WITH POSSIBLE VANDALISM ON MY PROPERTY. ALSO THIS LAND IS USED FOR HUNTING AND TRAPPING, SO I AM ALSO CONCERNED WITH DOGS RUNNING LOOSE AS THERE WOULD BE NO ONE TO MONITOR THE PEOPLE USING THE TRAIL.

LARRY INGHAM

Additional comments may be sent to:

Scott Copey, Town Planner
scopey@greeceny.gov

TOWN OF GREECE
HOJACK TRAIL FEASIBILITY STUDY

COMMENTS

Please share any additional comments or feedback you have related to the Hojack Trail Feasibility Study.

Nice idea - look forward to its implementation.

Couple of questions - 1) There is alot of dirt bike - motor vehicle activity on section mentan to Hilton, how or will that activity be monitored

2) Will the trail be secure? Will there be some type of patrol in the area?

Additional comments may be sent to:

Scott Copey, Town Planner
scopey@greeceny.gov

TOWN OF GREECE
HOJACK TRAIL FEASIBILITY STUDY

COMMENTS

Please share any additional comments or feedback you have related to the Hojack Trail Feasibility Study.

This trail would be fantastic! We'd use it quite a bit for running & biking to Hilton. It would be a wonderful scenic asset for the local neighborhoods.

Additional comments may be sent to:

Scott Copey, Town Planner
scopey@greeceny.gov

TOWN OF GREECE
HOJACK TRAIL FEASIBILITY STUDY

COMMENTS

Please share any additional comments or feedback you have related to the Hojack Trail Feasibility Study.

LONG OVER DUE!
NEED PARKING AT ROAD CROSSINGS
DRINKING FOUNTAINS?
MILE MARKERS
DOG POOP BAGS & ~~WHEEL~~ WASTE RECEPTICALS
911 CALL BOXS?
PICKNICK AREAS?

Additional comments may be sent to:

Scott Copey, Town Planner
scopey@greeceny.gov

Richard and Carol Kluth

485 Wilder Road

Hilton, NY, 14468

Hojack Trail Feasibility Study

1. Who will maintain the trail?
   In the past RG&E has trimmed the tree branches on the north side of the tracks by the electric lines. What about the overgrowth on the south side?

2. What will the base be on the trail?
   We own property on both sides of the former hojack railroad and plant crops on both sides. The tractors, plows and other large equipment need to access the land and would be driving over the proposed trail.

3. Will there be a sign that states NO MOTORIZED VEHICLES?
   I'm sure that the trail will be used by people driving their 4 wheelers. We now have people driving off the former railroad onto our property and damaging the crops. Installing a public trail will only increase that.

4. Why weren't the land owners adjacent to the proposed trail notified or a Public Notice placed in the Suburban News which covers Parma? If I wanted to add a shed to my property I would have to notify everyone within 500 feet of my property so they could voice their concerns.

5. It seems to me that the amount of money to be spent does not justify the number of people that would use the trail. Certainly those that ride their bikes on Wilder Road that may be traveling from Greece would not be using the trail. When traveling the Parkway and 390 we do not see many walking or riding bikes on the paved trail.

6. What happens when the users get to the area where the trestles were located?

7. Who is liable for injuries to someone who gets hurt or for damages to bikes or vehicles because of rough spots?

8. This trail would provide an access to our property and barns from the south that is not easily viewed. The trail would also run along the apple orchards that are on the south side belonging to a Burritt Road resident. The trail would also dissect Kelly's Apple Farm. Would you like a public trail dissect your back or side yard?

We will await more information and hope you will keep us informed. Thank you for reviewing our comments.

Richard Kluth
Carol Kluth
3-3-2016

RE-OPEN ACCESS OF HOJACK LINES TO SNOWMOBILES:

- THE GREATER THE USE → THE LESS CHANCE OF MISCHIEF DUE TO INCREASED VISIBILITY
- CURRENTLY NO GREECE SLED TRAILS EXIST. THIS HAS CAUSED ECONOMY (SUCH AS "THE LEMON TREE") TO SUFFER & CLOSE DUE TO LOSS OF BUSINESS
- NOT A POLLUTION SOURCE
- ONLY RESPONSIBLE USERS JOIN SNOW MOBILE CLUBS, SUCH AS HILTON SNO-FLYERS WHO ACTIVELY POLICE THE TRAILS
- WHEN RAIL TIES WERE TORN UP ≈1978, THE "TRAIL" WAS DESIGNATED TO BE FOREVER GREEN

OPEN TO HIKERS, BIKERS, JOGGERS, CROSS-COUNTRY SKIERS AND SNOW-MOBILERS. NO OTHER LOCATION IN GREECE OFFERS SUCH A UNIQUE ACCESS.

- EVERY YEAR SNOWMOBILE MUST BE REGISTERED WITH $40 DESIGNATED TO "SNOWMOBILE TRAIL MAINTANCE. THIS IS MONEY LEAVING GREECE AND GOING DIRECTLY TO SUCH PLACES AS OLD FORGE, SO SLEDDERS HERE GET NOTHING FOR THE MONEY.

GOOD TO HAVE THE TRANSITION TO PAVEMENT BEFORE CROSSINGS APPROACHES. THANKS FOR THIS IN PROPOSAL!

- MAINTENANCE IN FUTURE FOR STONEDUST HOW WILL IT BE ADDRESSED

Hard Paved?

Cost ?

- * "MUNICIPAL OWNED LAND"
- TOWN-VILLAGE LOGOS SNOWMOBILES?
- & IN THE BLOCK
- GATES BIG ENOUGH FOR VEHICLE
- HORSE TRAFFIC
- REVISE TRAILHEAD ON RAE DRIVE PRIVATE

- BIKE PATROL
- HORSE TRAFFIC
- 2 TRAIL (LEHIGH VALLEY REC. TRAIL) FUNDING
- SPECIAL PERMIT FOR CLEAN UP

GREECE · PARMA · HILTON

HOJACK TRAIL FEASIBILITY STUDY

APPENDIX B
Potential Areas of Conflict Between Users

POTENTIAL AREAS OF CONFLICT BETWEEN USERS
(Derived from "Conflicts on Multiple Use Trails" by FHWA and the National Recreational Trails Advisory Committee)

Multi-use trails, when they are well designed, carefully maintained, and effectively managed, are a significant community resource. However, trails can have a number of conflicts and challenges, which can be addressed by physical design and management responses. Potential conflicts on the possible future Hojack Trail include conflicts between different types of trail users, conflicts between motorists and trail users at road crossings, and conflicts between trail users and property owners. The following sections discuss ways to manage conflict.

1. Managing Conflict on Multi-Use Trails
The challenges faced by multiple use trail managers can be broadly summarized as maintaining user safety, protecting natural resources, and providing high quality user experiences. These challenges are interrelated and cannot be effectively addressed in isolation. To address these challenges, managers can employ a wide array of physical and management options such as trail design, information and education, user involvement, and regulations and enforcement.

The existing literature and practice were synthesized into the following 12 principles for minimizing conflict on multi-use trails. Adherence to these principles should help improve sharing and cooperation on multi-use trails.

Recognize Conflict as Goal Interference. Trail conflict is typically related to human behavior rather than inherent incompatibility among different trail uses.

Provide Adequate Trail Opportunities. Offer adequate trail mileage and provide opportunities for a variety of trail experiences. This will help reduce congestion and allow users to choose the conditions that are best suited to the experiences they desire.

Minimize Number of Contacts in Problem Areas. Each contact among trail users (as well as contact with the evidence of others) has the potential to result in conflict. So, as a general rule, reduce the number of user contacts whenever possible. This is especially true in congested areas and at trailheads. Disperse use and provide separate trails where necessary after careful consideration of the additional environmental impact and lost opportunities for positive interactions this may cause.

Involve Users as Early as Possible. Identify the present and likely future users of each trail and involve them in the process of avoiding and resolving conflicts as early as possible, preferably before conflicts occur. For proposed trails, possible conflicts and their solutions should be addressed during the planning and design stage with the involvement of prospective users. Likewise, existing and developing conflicts on present trails need to be faced quickly and addressed with the participation of those affected.

Understand User Needs. Determine the motivations, desired experiences, norms, setting preferences, and other needs of the present and likely future users of each trail. This "customer" information is critical for anticipating and managing conflicts.

Identify the Actual Sources of Conflict. Help users to identify the specific tangible causes of any conflicts they are experiencing. In other words, get beyond emotions and stereotypes as quickly as possible, and get to the roots of any problems that exist.

Work with Affected Users. Work with all parties involved to reach mutually agreeable solutions to these specific issues. Users who are not involved as part of the solution are more likely to be part of the problem, both now and in the future.

Promote Trail Etiquette. Minimize the possibility that any particular trail contact will result in conflict by actively and aggressively promoting responsible trail behavior. Use existing educational materials or modify them to better meet local needs. Target these educational efforts, get the information into users' hands as early as possible, and present it in interesting and understandable ways.

Encourage Positive Interaction Among Different Users. Trail users are usually not as different from one another as they believe. Providing positive interactions both on and off the trail will help break down barriers and stereotypes, and build understanding, good will, and cooperation. This can be accomplished through a variety of strategies such as sponsoring "user swaps," joint trail-building or maintenance projects, filming trail-sharing videos, and forming Trail Advisory Councils.

Favor "Light-Handed Management". Use the most light-handed approaches that will achieve area objectives. This is essential in order to provide the freedom of choice and natural environments that are so important to trail-based recreation. Intrusive design and coercive management are not compatible with high-quality trail experiences.

Plan and Act Locally. Whenever possible, address issues regarding multi-use trails at the local level. This allows greater sensitivity to local needs and provides better flexibility for addressing difficult issues on a case-by- case basis. Local action also facilitates involvement of the people who will be most affected by the decisions and most able to assist in their successful implementation.

Monitor Progress. Monitor the ongoing effectiveness of the decisions made and programs implemented. Conscious, deliberate monitoring is the only way to determine if conflicts are indeed being reduced and what changes in programs might be needed. This is only possible within the context of clearly understood and agreed upon objectives for each trail area.

Trail managers recognize trail conflicts as a potentially serious threat. Many are optimistic, however, and feel that when trail conflict situations are tackled head on and openly they can become an opportunity to build and strengthen trail constituencies and enhance outdoor recreation opportunities for all users.

2. Challenges Faced by Multiple-Use Trail Managers

The manager of any trail faces many challenges, usually within the context of too few staff and too little money. The underlying challenges faced by trail managers, however, remain the same regardless of the type of trail and whether it serves a single group or many different ones. As described previously, trail managers attempt to: maintain user safety, protect natural resources, and provide high-quality user experiences. These issues can become more complex and more difficult to manage as the number and diversity of trail uses increase, but the challenges and the tools available to address them remain basically the same.

Maintaining User Safety. Unsafe situations or conditions caused by other trail users can keep visitors from achieving their desired trail experience. This goal interference due to safety concerns is a common source of conflicts on trails. There are a number of threats to user safety that can occur on trails. Some of these include:

- Collisions and near misses among users and/or their vehicles
- Reckless and irresponsible behavior
- Poor user preparation or judgment
- Unsafe conditions related to trail use (i.e. deep ruts, tracks on snow trail)
- Unsafe conditions not related to trail use (i.e. obstacles, terrain, weather, river crossings)
- Poor trail design, construction, maintenance or management
- Other hazards (i.e. bears, lightning, cliffs, crime)

To help maintain user safety on trails, planners and managers can attempt to control or influence many factors, including the following:

- User speed (often has more to do with speed differential than speed itself)
- Mass of user and vehicle (if any)
- Sight distances
- Trail width
- Trail surface
- Congestion (i.e. number of users per mile)
- Users overtaking one another silently or without warning
- Trail difficulty (i.e. obstacles, terrain, condition)
- User skill level and experience
- User expectations and preparedness (i.e. walkers who understand they may see bicycles on a particular trail can better prepare themselves for possible encounters)
- Emergency procedures
- On-site management presence

Protecting Natural Resources. Resource impacts such as soil erosion, damaged vegetation, polluted water supplies, litter, vandalism, and many other indications of the presence of others can lead to feelings of crowding and conflict. These feelings can occur even when there is no actual contact among different trail users. A hiker's enjoyment might be reduced by seeing all-terrain vehicle (ATV) tracks near a wilderness boundary, for example, or an equestrian user might be upset to see many cars with bike racks at the trailhead before beginning a ride.

Minimizing environmental impacts is a high priority for resource and recreation managers. Natural resources include soils, wildlife, vegetation, water, and air quality. Historic, cultural, and archaeological resources are also vulnerable to impacts caused by trail use. A considerable amount of trail manager time and resources is spent attempting to minimize impacts affecting each of these resources. All trail use, regardless of travel mode, impacts natural resources. Research indicates that the following factors influence the amount of resource damage caused by trail use:

- Soil characteristics: type, texture, organic content, consistency, depth, moisture (i.e. muddy versus dry), temperature levels (i.e. frozen terrain versus thawed)
- Topography and slope of trail surface
- Position in land form (i.e. northern versus southern exposure)
- Elevation
- Type of ecosystem
- Type of vegetation and terrain beside trail (influencing widening)
- Quality of trail design and construction (especially regarding drainage)
- Level of maintenance (i.e. effectiveness of drainage)
- Use: type, frequency, season, concentration/dispersal
- Type of vehicle
- Difficulty of terrain
- Up or down hill traffic direction
- Style of use or technique (i.e. skidding tires versus controlled riding)

Providing High-Quality User Experiences. Researchers believe that people who participate in outdoor recreation activities do so because they hope to gain certain rewards or outcomes. These outcomes consist of a wide variety of experiences such as solitude, challenge, being with friends and family, testing skills, experiencing nature, and others. The trail experience that is desired varies a great deal across activities, among people participating in the same

activity, and even within the same individual on different outings. In fact, recreational enthusiasts are often seeking to satisfy multiple desires in a single outing. Recreational behavior is understood to be goal-directed and undertaken to satisfy desires for particular experiences. The quality of these experiences is often measured in terms of user satisfaction.

In a perfect world, land managers could provide nearby, high-quality opportunities for every type of experience trail users might possibly seek. This is rarely possible, of course. Limited budgets, limited amounts of land, and the sheer number of users with different preferences make it impossible to perfectly satisfy all people all the time. Flexibility, compromise, and common courtesy on the part of all users are necessary to maximize the opportunities for high-quality experiences for everyone.

3. Physical Responses

Proper trail design, layout, and maintenance (or redesign and reconstruction when necessary) are essential for user safety and resource protection, and are important contributors to user satisfaction as well. Proper design addresses more than aesthetics and minimized resource impacts. Design can be used to encourage trail users to behave in appropriate ways. Influencing proper behavior through the subtleties of design is preferable and often more effective than attempting to do so, after the fact, through educational programs or regulations. For example, it is easier and more effective to prevent shortcutting of switchbacks by designing climbing turns in rugged, well-screened areas than by posting educational signs at poorly designed switchbacks.

Different users often have different needs and desires regarding physical trail attributes such as surface, slope, length, sight distances, and amenities. Various standards and recommendations are available for different user groups. These needs and preferences are far from universal even within one user group, however. Walkers, joggers, runners, hikers, people walking dogs, and people pushing strollers are all pedestrians, for example, but they do not have the same needs and desires in terms of physical trail attributes or trail settings. The best physical responses will always be dictated by specific local conditions. Managers and planners should identify the present and likely future trail users and determine the needs and desires of those users. Users of different ages, motivations, activity preferences, etc., will have different physical trail needs and preferences. Ryan (1993), for example, suggests hosting a community design workshop for proposed rail-trails to identify these needs and preferences.

Providing separate trails for different users groups has many drawbacks. They point out that it can be expensive, cause resentment, be difficult to enforce, and limit opportunities for communication and cooperation among users. When separate trails are necessary, they suggest encouraging rather than requiring single use and explaining the reasons for this strategy at trailheads. This approach combines physical design with information and education efforts. Advocates of multi-use trails see providing separate trails as a last resort. They feel positive interaction among users on the trail is best way to foster communication, understanding, and a strong, cooperative trail community.

Physical design solutions include:

- Paint the centerline on heavily used multi-purpose trails and greenways. This can help communicate that users should expect traffic in both directions and encourage users to travel on the right and pass on the left.
- Screen trails for sight, sound, and smells (i.e. exhaust fumes from motorized vehicles). Include physical and visual buffers in the design by using natural features such as topography, vegetation, or the sound of water to insulate users from one another when possible. Add buffers as needed on existing trails.
- Provide separate trailheads for different users.
- Separate uses at trailheads and for the first (most crowded) stretches of the trail. These separate segregated trails could then converge, perhaps a mile from the trailhead, after users are more spread out. On the other hand, Attila Bality of the National Park Service advocates forcing all trail users to share the same trail for some distance (i.e. one mile) before having single use or restricted-use trails diverge from the

main trail if necessary. He believes that users will only learn to understand one another and share trails if encouraged to do so. Some may not share unless forced to do so.

- Consider adequate sight distances in the design process.
- Build trails wide enough to accommodate the expected use. Many sources and recommended standards are available for various user groups.
- Build trails wide enough for safe passing, and/or provide pullout areas.
- Design and construct trails to minimize erosion.

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HOJACK TRAIL FEASIBILITY STUDY

APPENDIX C
Schematic Cost Estimates

Hojack Trail Feasibility Study
Preliminary Cost Estimate
Prepared for: The Town of Greece, Town of Parma, and Village of Hilton
May 26, 2016

COST SUMMARY

PHASE 1: North Greece Road to Route 390 Trail

Construction Subtotal	***$***	***1,834,120***
Survey Operations (2%)	$	36,700
Mobilization (4%)	$	73,400
Contingency (15%)	$	275,100
Estimated Design & Permitting	$	366,800
ESTIMATED ALTERNATIVE COST	**$**	**2,586,100**

PHASE 2: Village of Hilton to North Greece Road

Construction Subtotal	***$***	***1,548,295***
Survey Operations (2%)	$	31,000
Mobilization (4%)	$	61,900
Contingency (15%)	$	232,200
Estimated Design & Permitting	$	309,700
ESTIMATED ALTERNATIVE COST	**$**	**2,183,100**

TOTAL PROJECT COST	$	4,769,200

Hojack Trail Feasibility Study
Preliminary Cost Estimate
Prepared for: The Town of Greece, Town of Parma, and Village of Hilton
May 26, 2016

PHASE 1: North Greece Road to Route 390 Trail (4 Miles)

Item	Description	Quantity	Unit	Unit Price	Estimated Cost
1	**SITE PREPARATION**				
1.1	Clearing and Grubbing	8.5	Acre	$ 2,500.00	$ 21,250.00
1.2	Earthwork and Drainage Improvements	14,400	CY	$ 40.00	$ 576,000.00
1.3	Geotextile Separation	27,900	SY	$ 2.50	$ 69,750.00
1.4	Silt Fence	35,800	LF	$ 5.00	$ 179,000.00
1.5	Rolled Erosion Control Product	280	SY	$ 4.00	$ 1,120.00
2	**TRAIL SURFACE**				
2.1	Stone Subbase	7,800	CY	$ 45.00	$ 351,000.00
2.2	Stonedust Top Course	1,100	CY	$ 90.00	$ 99,000.00
2.3	Topsoil	1,700	CY	$ 85.00	$ 144,500.00
3	**ASPHALT APRONS @ ROAD CROSSINGS**				
3.1	Stone Subbase	1,600	CY	$ 45.00	$ 72,000.00
3.2	Binder Course	190	TON	$ 110.00	$ 20,900.00
3.3	Top Course	120	TON	$ 110.00	$ 13,200.00
4	**ASPHALT @ TRAILHEAD PARKING AREAS**				
4.1	Stone Subbase	330	CY	$ 45.00	$ 14,850.00
4.2	Binder Course	135	TON	$ 110.00	$ 14,850.00
4.3	Top Course	80	TON	$ 110.00	$ 8,800.00
5	**SITE FURNITURE**				
5.1	Rest Areas with Seating	13	EA	$ 2,000.00	$ 26,000.00
5.2	Bike Racks	3	EA	$ 800.00	$ 2,400.00
5.3	Signage Kiosks, Posts, Footings	3	EA	$ 2,500.00	$ 7,500.00
5.4	Trail Marking Signs, Posts, Footings	10	EA	$ 1,200.00	$ 12,000.00
5.5	Access Control 1/2 Gate & Signage	10	EA	$ 2,700.00	$ 27,000.00
5.6	Stone Boulder Access Control	66	EA	$ 400.00	$ 26,400.00
5.7	Road Crossing Pavement Marking & Signage	5	EA	$ 3,000.00	$ 15,000.00
5.8	911 Emergency Marker Concrete Railroad Ties	6	EA	$ 1,600.00	$ 9,600.00
5.9	Trail Delineation Signage	1	LS	$ 4,500.00	$ 4,500.00
6	**PLANTINGS**				
6.1	Establish Turf	20,000.0	SY	$ 1.75	$ 35,000.00
7	**BRIDGE/CULVERT IMPROVEMENTS**				
7.1	Timber Hand Rail at Culverts	50	LF	$ 50.00	$ 2,500.00
7.2	Pedestrian Bridge 2 Improvements	1	LS	$ 35,000.00	$ 35,000.00
7.3	Pedestrian Bridge 3 Improvements	1	LS	$ 45,000.00	$ 45,000.00
	Construction Subtotal				***$ 1,834,120***
	Survey Operations (2%)				$ 36,700
	Mobilization (4%)				$ 73,400
	Contingency (15%)				$ 275,100
	Estimated Design & Permitting				$ 366,800
	ESTIMATED COST				**$ 2,586,100**

Note: Quantity numbers are based off fieldwork, GIS aerial basemaps, and LiDAR contours. Conceptual estimate for budgeting purposes only.

Hojack Trail Feasibility Study
Preliminary Cost Estimate
Prepared for: The Town of Greece, Town of Parma, and Village of Hilton
May 26, 2016

PHASE 2: Village of Hilton to North Greece Road (2.5 Miles)

Item	Description	Quantity	Unit	Unit Price	Estimated Cost
1	**SITE PREPARATION**				
1.1	Clearing and Grubbing	7.5	Acre	$ 2,500.00	$ 18,750.00
1.2	Earthwork and Drainage Improvements	12,600	CY	$ 40.00	$ 504,000.00
1.3	Geotextile Separation	24,300	SY	$ 2.50	$ 60,750.00
1.4	Silt Fence	32,000	LF	$ 5.00	$ 160,000.00
1.5	Rolled Erosion Control Product	280	SY	$ 4.00	$ 1,120.00
2	**TRAIL SURFACE**				
2.1	Stone Subbase	6,800	CY	$ 45.00	$ 306,000.00
2.2	Stonedust Top Course	1,000	CY	$ 90.00	$ 90,000.00
2.3	Topsoil	1,500	CY	$ 85.00	$ 127,500.00
3	**ASPHALT APRONS @ ROAD CROSSINGS**				
3.1	Stone Subbase	760	CY	$ 45.00	$ 34,200.00
3.2	Binder Course	95	TON	$ 110.00	$ 10,450.00
3.3	Top Course	60	TON	$ 110.00	$ 6,600.00
4	**ASPHALT @ TRAILHEAD PARKING AREAS**				
4.1	Stone Subbase	0	CY	$ 45.00	$ -
4.2	Binder Course	0	TON	$ 110.00	$ -
4.3	Top Course	0	TON	$ 110.00	$ -
5	**SITE FURNITURE**				
5.1	Rest Areas with Seating	9	EA	$ 2,000.00	$ 18,000.00
5.2	Bike Racks	1	EA	$ 800.00	$ 800.00
5.3	Signage Kiosks, Posts, Footings	1	EA	$ 2,500.00	$ 2,500.00
5.4	Trail Marking Signs, Posts, Footings	6	EA	$ 1,200.00	$ 7,200.00
5.5	Access Control 1/2 Gate & Signage	4	EA	$ 2,700.00	$ 10,800.00
5.6	Stone Boulder Access Control	18	EA	$ 400.00	$ 7,200.00
5.7	Road Crossing Pavement Marking & Signage	1	EA	$ 3,000.00	$ 3,000.00
5.8	911 Emergency Marker Concrete Railroad Ties	8	EA	$ 1,600.00	$ 12,800.00
5.9	Trail Delineation Signage	1	LS	$ 5,500.00	$ 5,500.00
6	**PLANTINGS**				
6.1	Establish Turf	17,500.0	SY	$ 1.75	$ 30,625.00
7	**BRIDGE/CULVERT IMPROVEMENTS**				
7.1	Timber Hand Rail at Culverts	110	LF	$ 50.00	$ 5,500.00
7.2	Pedestrian Bridge 1 Improvements	1	LS	$ 125,000.00	$ 125,000.00
	Construction Subtotal				***$ 1,548,295***
	Survey Operations (2%)				$ 31,000
	Mobilization (4%)				$ 61,900
	Contingency (15%)				$ 232,200
	Estimated Design & Permitting				$ 309,700
	ESTIMATED COST				**$ 2,183,100**

Note: Quantity numbers are based off fieldwork, GIS aerial basemaps, and LiDAR contours. Conceptual estimate for budgeting purposes only.

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HOJACK TRAIL FEASIBILITY STUDY

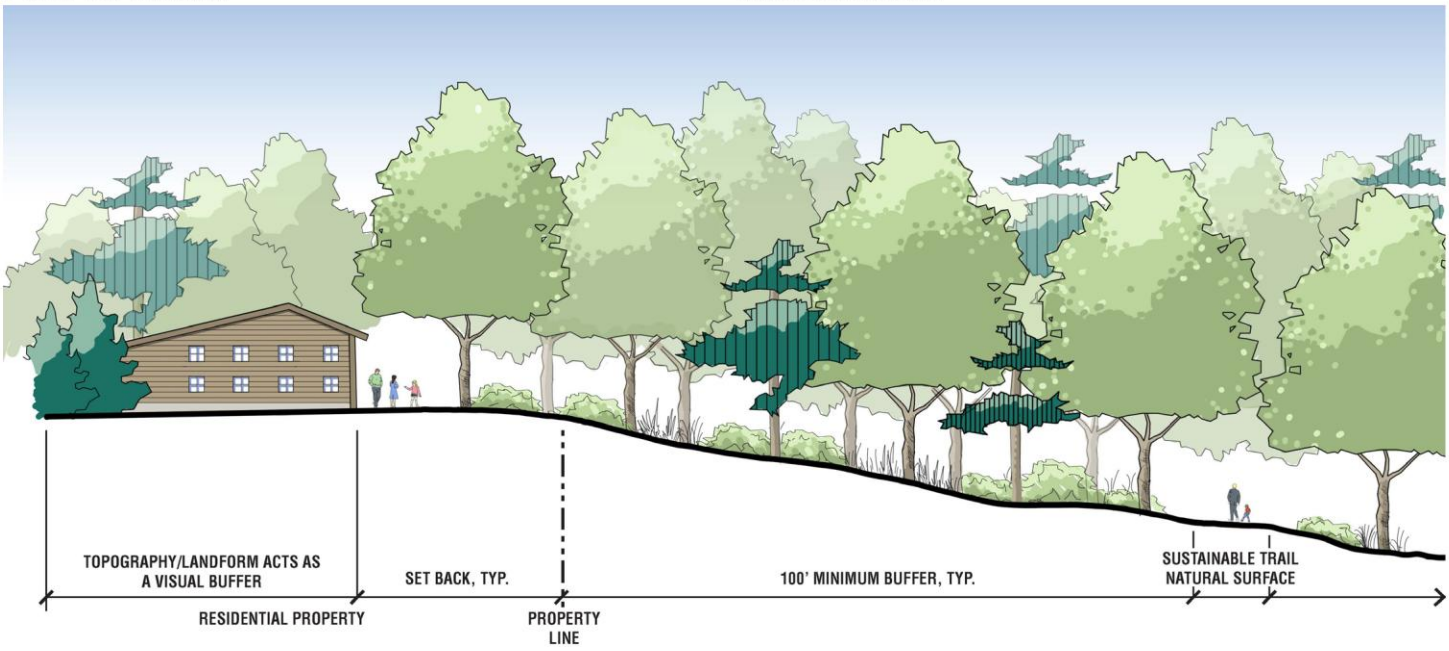
APPENDIX D
Community Impacts of Trails

Irondequoit Bay Park West, Irondequoit NY

Erie Canalway Trail, Brighton NY

El Camino Trail, Rochester NY

Corbetts Glen, Brighton NY



COMMUNITY IMPACT OF TRAILS

Understanding the impact of public trails

Prepared by Barton & Loguidice, DPC

STUDIES OF EXISTING TRAILS AND SHARED USE PATHS

https://linkingtheloop.files.wordpress.com/2014/08/studies-of-existing-trails-crime-and-properties-value.pdf

Source: Multiple

Subject: Trail Safety and Real Estate Values

Findings: "There are many misconceptions about the safety of bicycle paths/trails and their relationship to property values/the real estate market. Below is a collection of excerpts from various resources that provide information on the often-misunderstood nature of bicycle paths/trails and their effect on the community."

Figure 1: Comparison of Major Crime Rates between Rail Trails and the Nation (rates per 100,000 population, Source: Rails to Trails Conservancy

CRIME	URBAN		SUBURBAN		RURAL	
	1995 National[1]	Rail-Trails[2]	1995 National[1]	Rail-Trails[2]	1995 National[1]	Rail-Trails[2]
Mugging	335	0.53	102	0.00	19	0.00
Assault	531	0.58	293	0.02	203	0.01
Forcible Rape	43	0.04	29	0.00	26	0.01
Murder	11	0.04	4	0.01	5	9.01

1. Rates per 100,000 Population. FBI Uniform Crime Reports for 1995.
2. Rates per 100,000 users, RTC survey results.

THE CORRELATION OF NATURE TRAILS AND CRIME

http://www.parkpride.org/get-involved/community-programs/park-visioning/content/correlationbetweennaturetrailsandcrime.pdf

Source: Multiple

Subject: Trail Safety and Real Estate Values

Findings:

- "The results showed that in most incidences the trails were perceived to be positive to both quality of life and property value.
- Single family home residents adjacent to a trail: 29% believed that the location of the trail would increase selling price, 7% felt that the trail would make the home easier to sell, 57% of these residents lived in their homes prior to construction of the trail, 29% of those surveyed were positively influenced by the trail in their decision to buy the home
- Town homes, apartments, and condominium residents: 0% thought the trail would decrease selling price, 42% thought it would increase the selling price.

NEIGHBORHOODS AND TRAILS: WHY TRAILS?

http://www.sfct.org/trails/neighborhoods

Source: Santa Fe Conservation Trust

Subject: Crime, Privacy and Noise, Property Values, Ecological Destruction, Habitat Degradation, Land Acquisition and Property Rights

Findings:

- "Burglary near trails was extremely rare, more so than other crimes. Only 4 burglaries were reported in homes adjacent to 7,000 miles of rail trails in 1996 and 3 of those 4 were reported in rural areas. There's no evidence that these 4 crimes were a result of the nearby trail."
- "In Santa Rosa (California), a similar survey found that 64% of the residents near a trail felt their quality of life had improved; 33% said their home would be easier to sell while the remainder felt the trail had no effect on values." [Webel, 2007 using data collected in 1992]
- "A careful count of bird species along urban and rural rail trails showed no significant difference. Generally, there were more birds in woody urban and rural areas in spring and summer and more birds near urban trails in the fall and winter. [Poague, 2000]
- "For example, a release from liability can be useful, but homeowners and agency administrators may be reluctant to sign anything. Municipal "umbrella" policies are helpful and claims virtually unknown." [Eyler, 2008, p. 423]

RAIL-TRAILS AND SAFE COMMUNITIES

http://safety.fhwa.dot.gov/ped_bike/docs/rt_safecomm.pdf

Source: Rails-to-Trails Conservancy

Subject: Economic Impacts of Trails

Findings: *"The trail has not caused any increase in the amount of crimes reported and the few reported incidents are minor in nature...We have found that the trail brings in so many people that it has actually led to a decrease in problems we formerly encountered such as underage drinking along the river banks. The increased presence of people on the trail has contributed to this problem being reduced."* [Charles R. Tennant, Chief of Police, Elizabeth Township, Buena Vista, PA]

Figure 2: Comparison of Incidence Rate of Minor Crimes on Rail-Trails to U.S. Crime Rates & Percentages of Trails Reporting Types of Crime in 1995

CRIME	URBAN		SUBURBAN		RURAL	
	National[1]	Rail-Trails[2]	National[1]	Rail-Trails[2]	National[1]	Rail-Trails[2]
Burglary	1,117	0.00%	820	0.01%	687	0.01%
Trespassing	N/A	5%	N/A	3%	N/A	4%
Graffiti	N/A	26%	N/A	17%	N/A	12%
Littering	N/A	24%	N/A	24%	N/A	25%
Sign Damage	N/A	22%	N/A	22%	N/A	23%
Motorized Use	N/A	18%	N/A	14%	N/A	23%

1. Rates per 100,000 Population. FBI Uniform Crime Reports for 1995 for burglary.

2. Rates per 100,000 users, RTC survey results for burglary. Results for other crime types reported as percentage of trails experiencing that type of crime.

ECONOMIC IMPACTS OF TRAILS

http://www.americantrails.org/resources/economics/GreenwaySumEcon.html

Source: American Trails

Subject: Economic Impacts of Trails

Findings: "In the vicinity of Philadelphia's 1,300 acre Pennypack Park, property values correlate significantly with proximity to the park. In 1974, the park accounted for 33 percent of the value of land 40 feet away from the park, nine percent when located 1,000 feet away, and 4.2 percent at a distance of 2,500 feet." Hammer, Coughlin and Horn, 1974]

IMPACTS OF TRAILS AND TRAIL USE

http://www.americantrails.org/resources/adjacent/sumadjacent.html

Source: American Trails

Subject: Impacts of Trails and Trail Use

Findings: "A 1978 study of property values in Boulder, Colorado, noted that housing prices declined an average of $4.20 for each foot of distance from a greenbelt up to 3,200 feet. In one neighborhood, this figure was $10.20 for each foot of distance. The same study determined that, other variables being equal, the average value of property adjacent to the greenbelt would be 32% higher than those 3,200 feet away."

PROPERTY VALUE/DESIRABILITY EFFECTS OF BIKE PATHS ADJACENT TO RESIDENTIAL AREAS

http://128.175.63.72/projects/DOCUMENTS/bikepathfinal.pdf

Source: University of Delaware

Subject: Property Value Near Bike Paths

Findings: "The analysis indicates that the impact of proximity to a bike path on property prices is positive, controlling for the number of bedrooms, years since sale, acres, land, buildings, total number of rooms, total assessment. The properties within 50m of the bike paths show a positive significance of at least $8,800 and even higher when controlled for specific variables."

BICYCLE PATHS: SAFETY CONCERNS AND PROPERTY VALUES

http://www.greenway.org/pdf/la_bikepath_safety.pdf

Source: Los Angeles County, Metropolitan Transportation Authority

Subject: Home sales near trails

Findings:

- "Home sales were examined in the seven Massachusetts towns through which the Minuteman Bike way and Nashua River Rail Trail run. Statistics on list and selling prices and on days on the market were analyzed. The analysis shows that homes near these rail trails sold at 99.3% of the list price as compared to 98.1% of the list price for other homes sold in these towns. The most significant feature of home sales near rail trails is that these homes sold in an average of 29.3 days as compared to 50.4 days for other homes." [Home Sales Near Two Massachusetts Trails, Jan. 25, 2006. Craig Della Penna]

TABLE 1: HOME SALES NEAR RAIL TRAILS

TOWN	NO. OF PROPERTIES SOLD	AVERAGE LIST PRICE	AVERAGE SALE PRICE	RATIO OF SALE TO LIST	DAYS ON MARKET
Arlington	10	$513,750	$509,690	99.2%	27.1
Lexington	10	$906,090	$907,040	100.1%	18.5
Bedford	3	$511,600	$500,833	97.9%	55.3
Ayer	1	$329,900	$317,500	96.2%	47.0
Groton	2	$689,900	$675,000	97.8%	22.0
Dunstable	1	$695,000	$685,000	98.6%	20.0
Pepperell	3	$385,833	$376,333	97.5%	48.3
AVERAGE		$643,180	$638,377	99.3%	29.3

TABLE 2: HOME SALES NEAR RAIL TRAILS

TOWN	NO. OF PROPERTIES SOLD	AVERAGE LIST PRICE	AVERAGE SALE PRICE	RATIO OF SALE TO LIST	DAYS ON MARKET
Arlington	119	$558,775	$556,327	99.6%	28.3
Lexington	166	$871,533	$849,470	97.5%	54.4
Bedford	38	$633,912	$624,289	98.5%	42.4
Ayer	30	$344,677	$340,155	98.7%	73.0
Groton	53	$605,198	$584,689	96.6%	80.4
Dunstable	12	$587,946	$578,965	98.5%	83.2
Pepperell	57	$384,818	$379,482	98.6%	80.2
AVERAGE		$645,607	$633,072	8.1%	50.4

- "Realizing the selling power of greenways, developers of the Sheperd's Vineyard housing development in Apex, North Carolina added $5,000 to the price of 40 homes adjacent to the regional greenway, those homes were still the first to sell." [Economic Benefits of Trails and Greenways, Rails-to-Trails Conservancy, 2004]
- "The average price for all homes sold in greenway corridors was nearly 10 percent higher than the average price for all homes. Similarly, the average sale price was 11 percent higher than for all homes that sold in 1999," [Public Choices and Property Values: Evidence from Greenways Indianapolis, Center for Urban Policy and the Environment, December 2003]
- "A study of property values near greenbelts in Boulder, Colorado, noted that...other variables being equal, the average value of property adjacent to the greenbelt would be 32 percent higher than those 3,200 feet away." [Economic Impacts of Rivers, Trails and Greenways: Property Values. Resource Guide published by the National Parks Service, 1995]
- "A study completed by the Office of Planning in Seattle, Washington, for the 12 mile Burke-Gilman trail was based upon surveys of homeowners and real estate agents. The survey of real estate agents revealed that property near, but not immediately adjacent to

the trail, sells for an average of 6 percent more." [Economic Impacts of Rivers, Trails and Greenways: Property Values. Resource Guide published by the National Parks Service, 1995]

- "In a survey of adjacent landowners along the Luce Line rail-trail in Minnesota, 61 percent of the suburban residential owners noted an increase in their property value as a result of the trail. New owners felt the trail had a more positive effect on adjacent property values than did continuing owners. Appraisers and real estate agents claimed that trails were a positive selling point for suburban residential property." [Economic Impacts of Rivers, Trails and Greenways: Property Values. Resource Guide published by the National Parks Service, 1995]
- "A survey of Denver residential neighborhoods by the Rocky Mountain Research Institute shows the publics increasing interest in greenways and trails. From 1980 to 1990, those who said they would pay extra for greenbelts and parks in their neighborhoods rose from 16 percent to 48 percent." [Economic Impacts of Rivers, Trails and Greenways: Property Values. Resource Guide published by the National Parks Service, 1995]
- "Recognizing what had happened, the realty companies decided to restructure the pricing of future lots located along the Mountain-Bay Trail. Thus, in the addition of Highridge Estates, the average lot located along the rail was priced 26 percent higher than slightly larger lots not located along the trail." [Perceptions of How the Presence of Greenway Trails Affects the Value of Proximate Properties. Journal of Park and Recreation Administration, Fall 2001. John L. Crompton.]